Piko, Lifeline of the Community: Principles of Adaptive Reuse at Iwilei Dole Cannery

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Abstract

Dying malls are a growing concern in our urban landscape and decreasing property values in the surrounding neighborhood in extreme cases leading to total building abandonment. Often found in lower to mid-income communities, these dying sites are becoming increasingly common. **It is unknown whether the community is a reflection of the landscape, or the landscape is a reflection of its people. Whatever the direction, little to no outreach opportunities exist for the community and its people.**

The original function of a building, whether through economy and/or industry change, is no longer applicable. The goal of this study is to show that adaptive reuse of these spaces coupled with the right social programs, can be the catalyst for change in human behavior.

Community uplift is a core goal at the proposed site, **The Shops at Dole Cannery**. The uplift will be achieved through an intensive inward focus on the community of Iwilei and an extensive outward focus on the Department of Education's Farrington district (Kalihi). Smart solutions that incorporate education, a self-sustainable hands on design, and income generating programs will address the challenges of those in the low/mid income socio-economic strata.

Public-Private entities are mutually beneficial and work conjointly. Public spaces provide the venues that host private entities, and in return, the public entity gains access to a steady stream of financial resources. Adaptive reuse sites will bring together the concepts of community uplift, urban renewal, and environmental sustainability. To further support the idea of social ecology, a re-examination of local building codes is in proposed.

The foundation of this study rests upon the understanding that a balanced network transportation system will increase mobility compatible with current urban living conditions. Innovative program/project design is critical. Promotion of a public transportation system with feeder stops will both increase and encourage high occupancy to once dead sites.

Introduction

Research Goals and Objectives

Purpose

The purpose of this research project is twofold: first, to identify cases where industrial buildings have been converted into urban renewal projects; second, to provide a design solution for the Shops at Dole Cannery, Honolulu, Hawaii. In researching examples of the adaptive reuse of industrial buildings and assessing project histories, this research/design project hopes to identify common factors and develop conclusions about the relationships between culture, society, and ecology. The ultimate end goal of this thesis is to develop an adaptive solution for the reuse of an industrial building in the lower/mid income Iwilei community. Urban revitalization will uplift the spirit of this community and serve as a catalyst for social change. This research/design will also demonstrate the importance of planning and building for future flexibility by underscoring the value of reusing the built form.

Overview

A detailed analysis of four precedent adaptive reuse projects is the foundation for the thesis research/design. The projects were selected based upon the existence of similar characteristics from a brief examination of various adaptive reuse projects. Compiling data from multiple resources included interviews with those who worked closely on the projects, books, and various websites. The precedent studies were then organized by a common framework and comparatively evaluated.

Questions, Objectives, and Claims

Three research questions drove the precedent studies of the adaptive reuse projects:

(1) What factors influenced the decision to undertake this type of adaptive reuse project?

(2) What steps were taken to alter the image of the building?

(3) Using precedent studies, what factors will influence urban renewal projects?

Specific objectives designed to aid the identification of those factors include:

I. Understanding the role of flexible space on future building use
   A. What programmatic and architectural elements are essential for an industrial building redevelopment into a mixed-use, urban renewal project?
   B. What were the types of community outreach developers undertook to bolster support for the project?
   C. What external benefits were generated as a result of the adaptive reuse project?
II. Understanding the implications of planning and building for flexible use spaces
   A. What architectural factors are critical to the flexible reuse of industrial buildings?

This research addresses the following claims derived from a literature review of topics on adaptive reuse, urban sprawl, parking, mixed-use, rapid transit, new-transurbanism, and architectural field experience.

I. Industrial buildings and dead shopping malls can effectively be redeveloped as mixed-use centers.
II. Dead shopping malls and derelict industrial buildings are community challenges, thus the use of these buildings can help address community challenges.
III. These types of adaptive reuse projects will typically occur in metropolitan areas where the cost of land is increasing and large lots of land are becoming scarce.

Key Research Goals

This study will generate research/design that will be of use to architects and developers. It will increase awareness of adaptive reuse as an alternative option to construction. The following are key outcomes for this research:

I. Proposed design of the dead shopping mall at Dole Cannery, Iwilei, Oahu, Hawaii and the surrounding Castle and Cook properties
II. Research and design promoting change in current local building codes to allow the use of a shared kitchen in dwelling units
III. A comparative analysis of precedent studies

Urban Sprawl

Honolulu has its beginnings as an agricultural community. With an appealing environment to Americans that settled in Honolulu, properties were soon acquired in central Oahu and turned into agricultural and industrial lands. Neighborhoods developed around the agricultural industry. When the industries suffered a sharp decline that led to eventual closure, what remained were neighborhoods distant from available jobs.

Today, every resident that makes the commute from central Oahu to downtown is all to familiar with one of the negative aspects of urban sprawl, traffic. With one of the worst traffic commute times in the United States, the city of Honolulu has implemented 20 miles of rail connecting West Oahu with Downtown Honolulu in hopes of alleviating some of the traffic. Of the 21 rail stations planned for the rail, one such station will be located within a half mile of the proposed project site.

In the book *Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities,* the authors with various backgrounds in public health and urban planning, analyze the connection between urban planning, architecture, transportation, community design, and public health. Frumkin provides evidence of health related

issues stemming from urban sprawl and develops an outline of the challenges of developing policies that promote and protect public health.

The term urban sprawl has made its way into the American vernacular with the first definition in reference to bodily position “to lie or sit with arms and legs spread out,” it has since been reformulated as the broader meaning to “spread or develop irregularly.”[1]

Urban sprawl became reality in the urban fabric of America in the late 1800s when suburbs slowly began to pop up outside of major East Coast cities. In the mid-20th century, post World War II urban sprawl flourished. The sprawl was fueled by the return of millions of GIs. In addition, development of federal interstate highways, federal and state policies, and the “American Dream:” economic boom, a demand for new and better housing, low mortgage interest rates and relatively inexpensive cars fanned the flames.[2]

Frumkin writes that public policies followed market forces and were implemented without a full understanding of their consequences. In one situation, Frumkin found that nearly every state in America adopted policies that encouraged urban sprawl, thus accelerating the decline of older urban communities and eventually killing the downtown area.

In a few states, policies for providing schools and other assistance were of little effort to equalize differences in wealth between cities and suburbs. State water and sewer grants gave money to both cities and suburbs that further increased suburban sprawl.

Lessons of Urban Sprawl

Negative qualities associated with urban sprawl relate to density. Examples of this include land consumption, low densities, lack of transportation options, lack of choice in

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[1] Howard Frumkin, et al., *Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities* (New York, NY: Island Press, 2004) 1-5

[2] Michael Dukakis, *Don’t Blame Washington: Suburban Sprawl and State Leadership*, Architecture Boston Fall 1999: 26-30

housing types and prices, separation of uses into distinct areas, commercial buildings surrounded by expansive parking, and a lack of public spaces and community centers, some of which can be seen in Figure 1.[3] These characterizations inevitably lead to serious problems. One such issue, traffic congestion, leads to a decline in:

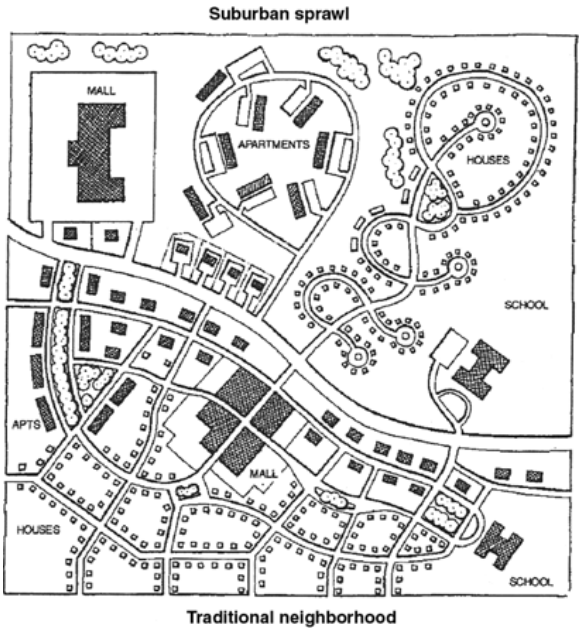

Figure 1: Example layout of urban sprawl. Source: Drawing by Duany Plater Zyberk as shown in Spielberg F. The Traditional Neighborhood Development: How Will Traffic Engineers Respond? ITE J. 1989;59:17.

I. Social interaction: Increased amount of time isolated in traffic leaves less time for social contact and involvement in communities and community activities.[4] A peak-period, one-way, half hour commute equates to 81 hours of delay each year.[5] [6]

II. Economic: At 17.6%, transportation costs are ranked the second largest expenditure per year for the average consumer.[7]

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[3] Howard Frumkin, et al., *Urban Sprawl and Public Health: Designing, Planning, and Building for Healthy Communities* (New York, NY: Island Press, 2004) 1-5

[4] "*INRIX Nationa*l Traffic Scorecard 2009 Annual Report." INRIX. INRIX, 2010. Web. 10 Mar 2010. <http://scorecard.inrix.com/scorecard/download.asp>

[5] "*F as in Fat: How Obesity Policies are Failing in America*." 2009, 28 Feb. 2010 http://healthyamericans.org/reports/obesity2009/Obesity2009Report.pdf

[6] "*INRIX National Traffi*c Scorecard 2009 Annual Report." INRIX. INRIX, 2010. Web.10 Mar 2010. http://scorecard.inrix.com/scorecard/download.asp

[7] "*Consumer Expenditure Survey (CE*)." U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics, 06 Oct. 2009. Web. 10 Mar 2010. <http://www.bls.gov/cex/>

III. Environment: Transportation accounted for approximately 29% of total U.S. Green House Gas (GHG) emissions in 2006. It is also the fastest-growing source of U.S. GHGs, accounting for 47% of the net increase in total U.S. emissions since 1990.[8] Although Hawaii is well below federal and state clean air standards for ground level ozone (O^3) and carbon monoxide (CO), recent trends in air pollution have brought the O^3 levels closer than ever to the Federal Standards. From 2007 to 2009, parts per million (ppm) for O^3 rose .02%. Since 2009, we have remained at a constant, but if levels are increased by just .025%, Hawaii will exceed Federal standards of acceptable O^3 levels (0.075) with a ppm of 0.08. This will result in an environment that is a danger to both plants and humans. [9]

IV. Health: A shortened list of pathogens in car exhaust and their effects:[10]

A. Carbon Monoxide - odorless, colorless, tasteless, yet highly toxic

B. Nitrogen Dioxide - toxic if inhaled even at low levels over a long period of time; contributes to acid rain

C. Sulphur Dioxide - causes pulmonary and respiratory distress

D. Benzene - human carcinogen

E. Polycyclic Hydrocarbons - human carcinogen; can cause harmful effects on skin and the auto-immune system.

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[8] "*Transportation and Climate*." U.S. Environmental Protection Agency. Office of Transportation and Air Quality, 15 Sept. 2009. <http://www.epa.gov/otaq/climate/index.htm>.

[9] "*State of Hawaii Annual Summary 2011 Air Quality Data*." Official Website of the State of hawaii.hawaii.gov/health/environmental/air/cabmaps/pdf/2011_aqbook.pdf

[10] "*Car exhaust chemicals*." Green Living Tips. Green Living Tips, 17 Oct. 2008. Web. 10 Mar 2010. <http://www.greenlivingtips.com/articles/269/1/Car-exhaust-chemicals.html>

To combat continuing growth of urban sprawl, we must look at alternative methods. A melding of mixed use developments and transportation is known as new transurbanism. With effects of urban sprawl adversely affecting our social interactions, the economy, environment, and health, it is important that transportation, in particular rapid transit, current parking and alternative parking methods, and new transurbanism is explored. Refer to the sections after *Mixed Use* in this chapter for further discussion on topics.

Chapter One: Literature Review

The following literature review is intended to provide background information for optimal uses of land and insight into effective urban design strategies. A key step in the exploration of potential strategies for adaptive reuse is a thorough review of the currently available research on adaptive reuse, mixed-use developments, parking, rapid transit, and new-transurbanism. The literature review provides insight into the history of how we arrived at a landscape of abandoned industrial buildings. Potential methods of rehabilitation using strategies of mixed-use developments and place-making, recognizing the necessity for public involvement, and the blending of alternative methods of transportation are explored.

Literature supports the need for developing a hypothesis regarding the most effective redevelopment strategies for industrial buildings. Redevelopment strategies include mixed-use development with pedestrian orientation, the introduction of the public/private sector, and explores other land use and urban design improvements. The methods used in the reviewed literature are then identified in Chapter Three precedent studies to provide support for the proposed methods of this study.

Adaptive Reuse

Historically, buildings have been designated for specific use (e.g., factories for factories, office complexes for offices); however, these structures no longer serve their original intended use. Examples of this include commercial buildings now hosting churches and former factories that house offices. This shift in use may be attributed to a number of reasons, some of which include economic, social, cultural, or political reasoning.

Cities across the United states are taking a holistic approach and developing strategic policy to abate and/or rehabilitate vacant or underutilized historic industrial buildings. A number of cities have made it a point to implement industrial building use as an integral part of their infill development and create affordable housing strategies under the rubric of smart growth.[11] One of the last planned industrial mill cities in the northeast, Lawrence, Masachusetts, is currently undergoing smart growth redevelopment.

In *The Revitalization of Vacant Properties*, Schilling describes how opportunities to reuse obsolete facilities in the urban core support sustainability and smart growth initiatives. Focusing on the redevelopment of inner cities is one solution in the larger effort to decrease urban sprawl. According to Schilling, historic buildings define the character of our communities by providing a tangible link to the past. Today, historic districts across the country are following a trend of revitalization; cities are using their cultural monuments as anchor points for redevelopment.

The precedent studies of Factory 798 and Lawrence Heritage State Park in Chapter Three heavily relies on its industrial historic identity as one key point of success in bringing visitors to the site. The industrial history of the Dole Cannery and the surrounding area of Iwilei is featured in the proposed redevelopment design in Chapter

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[11] Joseph M. Schilling, "*The Revitalization of Vacant Properties: Where Broken Windows Meet Smart Growth*" (2002) International City/County Management Association, 4.

Five. For further findings on how history aids the character of the redevelopment, refer to the precedent studies of those mentioned above in Chapter Three.

Adaptive reuse is the process of converting an existing building's use for something other than its initial intended purpose. This process involves rehabilitation, retrofit, redevelopment, or revitalization. The Urban Land Institute (ILU) defines rehabilitation as a variety of repairs or alterations to an existing building. This allows the building to serve contemporary uses while preserving features of the past. It is differentiated from renovation in that renovation involves remodeling of existing structures to meet the current demands of life. Retrofitting is defined as technology or features that are added to older structures. In redevelopment, the site may involve demolition and rehabilitation of existing structures, or a combination of the two. It involves balance between economics and preservation. Economic viability is slightly weighted. Reusing the parcel or a collection of parcels make it economically viable again. Examples of redevelopment will be explored in precedent studies in Chapter Three.

Historically significant buildings have been protected from demolition.[12] It can thus be said that recycling is an important tool for historic preservation. In *Reuse Versus Tear Down*, Hughes discusses existing policies. The federal government has not always supported the presevation of buildings. Before 1976, the Internal Revenue Code encouraged the demolition of older structures by allowing demolition costs to earn tax deductions. In 1976, the federal government passed the Tax Reform Act of 1976 (TRA of 1976) that provided a 25% credit for income producing properties. In 1986, the credit was reduced from 25% to 20% for certified historic structures, but a 10% tax credit for the rehabilitation of non-historic, non-residential buildings built before 1936 was added. Today, preservationists are promoting the Leadership in Energy and Environmental

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[12] Lawrence Kenney. *The Adaptive Reuse Process.* New River Valley Planning District Commission, Radfor, Virginia. June 13, 1980.

Design (LEED) system to provide more credits for building reuse as a way to encourage this option.[13]

Adaptive reuse has also been utilized as an effective real estate tool. In a report by Hamilton Morton, “Rehabilitation credits channeled more than $1.5 billion in private investment into the rehabilitation of 23,300 historic properties between 1976 and 1986.”[14] Fanieul Hall Market Place in Boston, Massachusetts, and Factory 798 is an example of this as it demonstrated that large obsolete sites could once again become viable spaces.

In addition to adaptive reuse as a real estate tool, it has also led to the redevelopment of brownfields in to retail and office spaces, warehousing, and in some cases where environmental contamination issues have been effectively mitigated, housing. Brownfields that require remediation due to perceived levels of environmental contamination will not be explored in the project.

Adaptive reuse is not only limited to historic structures; adaptive reuse also exists in greyfield redevelopments. Greyfield is a term used to describe economically obsolete assets or land. The name is a metaphor for the sea of empty asphalt that often accompanies these sites. Dead malls can therefore be classified as a type of greyfield. What constitutes a dead mall remains a matter of debate. Research has shown no definitive percentage of vacancy to classify a mall as dead. A 25-35% vacancy and/or low consumer traffic is the generally accepted classification for dead malls. The Shops at Dole Cannery with a 19% occupancy and very little consumer foot traffic is for the purposes of this project classified as a dead mall.

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[13] Keenan Hughes, “*Reuse versus Tear Down*,” Planning, 42.

[14] Hamilton Morton Jr., “*Update on U.S. Rehabilitation Tax Credits and the Transfer of Development Rights in the Economics of Conservation an International Scientific Committee Symposium*” sponsored by ICOMOS.

Greyfield redevelopments are other examples of how structures that were originally designed for specific purposes may also be adapted for alternative uses. The precedent study of Factory 798 is classified as a greyfield redevelopment and will be explored further in Chapter Three.

Lessons of Adaptive Reuse

In the Economics of Historic Preservation, Rypkema explores the financial benefits of adaptive reuse. Financial benefits are apparent in saved material and labor costs that are reduced as a result of existing cladding, foundation, and structural support systems. For developers, time is money, and time may very well be the defining factor. Saving on time and costs give the project the edge as financial feasibility in a competitive market makes sense. Aesthetic qualities or site location could also have a similar financial cost savings benefit.[15] [16]

New construction on undeveloped sites may trigger compliance issues that need to be addressed. Reusing a portion of the original building eliminates required approvals and environmental reviews that are necessary under new construction. This allows developers to comply with a set of existing building codes.[17] Buildings that are reused are often grandfathered into building setbacks, building height, zoning, etc.

Hughes states that adaptive reuse does come with its fair share of challenges. In some cases, it may not be more cost-effective when compared to new construction. Dollar for dollar construction costs are comparable once demolition and waste disposal costs are factored in. In some cases, adaptive reuse may be more financially reasonable.[18]

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[15] Donovan Rypkema, *The Economics of Historic Preservation*, (Washington D.C.: National Trust for Historic Preservation, 1994) 24-90

[16] Kirk, Patricia L. "*Changing Places*." Urban Land 66.11 (2007): 100-05. Print.

[17] Keenan Hughes, "*Reuse versus Tear Down*," Planning (January 2008), 42

[18] Keenan Hughes, "*Reuse versus Tear Down*," Planning (January 2008), 42.

In the precedent study of Salt Kakaako, although adaptive reuse will be more costly than new construction, it will allow the block to preserve the area's industrial character. Adaptive reuse maintains the comforting familiarity that comes with the sense of place and will keep construction debris out of local landfills.

City zoning ordinances may lengthen permitting processes for proposed projects with non-traditional uses. Some cities have removed those barriers to push redevelopment projects along. This support at the municipal level is crucial; it helps ease community opposition to the proposed project.

Structure alone may contain unique features that require expert knowledge. This would incur additional costs. Costs may also increase if the building's original construction plans have been lost or remain unobtainable. Personal field work experience increased awareness of asbestos issues, structural defects, and faulty mechanical systems when original plans were lost or unobtainable.

Retrofitting structures also come at a costly price. In larger industrial buildings, skylights may be needed to draw daylight in to inner parts of the building. Windows may need to be replaced because of energy deficiencies. One example of costly retrofitting can be seen at INK offices at Dole Cannery. The installation of a skylight and building of a loft to take advantage of high ceilings is common in industrial buildings. Projects seeking to take advantage of federal or state historic preservation tax credits will have to be especially careful when making the structure ADA accessible. If there is significant historical fabric alteration, it may negate tax credit eligibility.

Optimal conditions for adaptive reuse would include communities looking to strengthen their current assets, but have little to no space for growth. Beijing, China is a prime example. Progressive communities such as Lawrence, Masachusetts, seeking to maintain a competitive edge is another community with optimal conditions.

There are a number of studies on the benefits and challenges of adapting historic buildings for reuse, but less information on the reuse of modern structures. Hugh deducts that this could be the result of the perception that buildings less than 50 years of age is not worth saving and/or will not withstand the test of time.[19] This argument is something that will not be explored in this document. The original factory of Dole Cannery was built in 1907. At 107 years, it is deemed a historic building.

To understand how we arrived at the lack of space for growth, we have to explore our development beginnings through urban sprawl and its effect on our built landscape.

Mixed Use

One solution to urban sprawl is the implementation of mixed use communities where work and home are closer to each other.

History

Medieval towns throughout Europe (i.e., Greece, Rome, Italy, France, and England) are characterized by an encompassing wall for purposes of protection. Compact, high-density cities with a high level of integration of governmental, commercial, and residential uses formed as a result of protection. An example is the medieval walled city of Carcassonne, France (Figure 2). Early twentieth century mixed-use developments include that of

Figure 2: Typical Medieval walled city. Example shown is of Carcassonne, France.

[19] Keenan Hughes, "*Reuse versus Tear Down*," Planning (January 2008), 42.

the urban village model and downtown complexes.

Later, hallmarks of European cities remained as compact, dense, and mixed-use centers. Design aspects such as the need for more open areas and wider streets were resultant from the increase in scale of economic, political, and religious activities. These ancient cities are the backbone of older American cities and can be found in the traits of modern mixed-use developments.

Mixed-use development in the 20th century include early urban village models (garden city movement), early downtown complexes (established a new scale for height and density), the emergence of modern mixed-use projects in the 1960s (mixed-use tower introduced), internal orientation in the 1970s, postmodernism and openness in the 1980s, and the town centers and urban villages in the 1990s and early 2000s (refinement and evolution of previous models).

Mixed-Use Defined

According to the ULI, a mixed-use development is characterized by having: three or more significant revenue producing uses, having a significant physical and functional integration of project components, including uninterrupted pedestrian connections, and development in conformance with a coherent plan. The first characteristic that separates the average real estate project from that of a mixed-use development is that mixed-use developments include three or more major uses. The primary uses of these developments are income producing while other spaces like cultural or civic facilities generally require public sources to be financially viable. The Lawrence Heritage State Park is an example where public donations are used to fund programs and ongoing park maintenance.

The second characteristic is a significant physical and functional integration of project components. These components should be connected by pedestrian links that according

to the ULI could take a physical form such as: a vertical mixing of program into a single tower, careful positioning of program around central public spaces, or an interconnection of program through pedestrian friendly pathways. The Oxo tower utilizes the vertical mixing of program with a transition of public at ground level, semi-private at mid-level, and private at the uppermost levels. This stacking of program components is one that will be implemented in the adaptive reuse of the Dole Cannery Building.

The third and final characteristic is that the mixed-use developments are planned and executed from a composed development strategy and plan. Plans include a study on market, development program, land use and building configuration plans and models, working drawings, cost estimates, feasibility analyses, financing plans, marketing plans, and management plans. The purpose of these conceptual plans is to set the types and scale of land uses, densities, and areas on the site where the development of different programs is to occur. These documents guide the development in terms of scale, timing, type, building density, program locations, and infrastructure. This sets it apart from other projects as it deters the spaces from resulting in a non-cohesive design.

Configurations

Mixed-use developments come in various scales, types, and configurations. The basic physical configurations of these developments can be grouped into three categories: high-rise, integrated multi-tower, and town centers/urban villages/districts.

The mixed-use high-rise is a single structure where the program is layered vertically. Variations of this structural configuration include that of a tower rising from a larger base structure and the attachment of a low-rise structure to a large tower. One example of the many mixed-use towers is the Jin Mao Tower in Shanghai. The tower has a layer of hotel space above office space, with a separate multi-level retail mall on the side of the tower.

The most distinctive physical configuration of the mixed-use high-rise is the requirement of program to fit into a single mass that commands a striking physical profile. Establishing a landmark helps in marketing development. However, there is a disadvantage; there is less opportunity to create compelling outdoor public spaces or civic realms.

The multi-tower or complex include a series of buildings and towers that are connected by a common atrium, concourse, or structure that integrates most of the components at the lower levels in a common base.

Objectives of Development Entities

Landowners that owned properties for long periods have initiated much of the mixed-use projects being developed today. In many cases, the land has been used for other purposes or is adjacent to other properties they own. Often, long-term landowners own a lot of land and own it outright. This creates the possibility of a fairly large project with unusual project economics, development strategies, and designs. The recent Kakaako Development in Downtown Honolulu under landowners, Kamehameha Schools, is one such development that spans multiple blocks. There are plans to create affordable housing where residents can live, work, and play in a future transit oriented neighborhood.

The driving force for developers and property companies alike is purely one of profit. However, personal and ego gratification also play a role. Mixed-use projects are deemed state of the art and are considered the highest form of real estate development.

Site Selection and Program

While the characteristics of a mixed-use site vary, there are generally several features in common: they must be substantially sized or allow for high density, have excellent access and good exposure, and located in an existing larger multi-use environment. The types of sites that a mixed-use project frequents include: downtown, suburban activity

centers and business parks, shopping centers, planned communities, resort areas, and transit stations. The Cannery Building at Iwilei is capable of achieving all of the features mentioned above and therefore one of the reason for site selection.

Parking

An easy way to aid the design of a pedestrian friendly compact development is to provide efficient parking that minimizes unnecessary surface parking. Surface parking more often than not covers more ground than the buildings they intend to serve. An example of excessive parking in Hawaii is the 147,979SF Wal-Mart in Pearl City. Wal-Mart parking alone provides more than enough stalls for its customers and surrounding businesses.

A shopping center adjacent to Wal-Mart's large parking lot included in the design its own parking stalls. This added an additional 150 stalls to an already half occupied large parking surface. This situation could have been avoided through code alternatives, creative site planning and management of commercial centers, or the implementation of modern parking technologies. Proposed for the Cannery is the implementation of automated parking technologies when demand for parking can not be met alone through vertical expansion of the existing parking structure.

History

As sprawl began to spread throughout the country, parking structures sprouted like weeds on a sidewalk as people began to return to downtowns. Static in structure and dynamic in movement, the multi-story parking structure is designed with the notion that we do not remain; we come and go. Not surprisingly, its shape defined by the car body is designed for wheels.

Geography, too, at times defines the upbuild of these structures. With land at a premium and building height restrictions, we need look no further than Waikiki. Here, parking lots are forced to develop below grade. With the water-table just below grade elevation in

Waikiki, basements and basement leak problems are not unusual. Even half-basements are prone to fluctuating hydrostatic pressures up to three feet above the finished floor, at high tide.[20]

The generation of buildings from the early 1900's set the earmark for the warehouse parking structure. Not until 1948 did the parking structure first strip its walls exposing its internal order. Gone were the layers of skin, revealing the structural skeleton of the "building." Space was characterized through repetitive columns, beams, decks and barriers. The internal landscape constant in nature is deep in plan and compressed in section with a series of inclined planes.

Modern mechanics (i.e., computers, sensors, cameras and mechanical components) have replaced the action of the driven car with that of an autonomous mechanism. Void of people and filled with stacked cars, these parking structures are now experienced as objects, not space. The demand for speed and safety in the 20th century resulted in the mechanization of these parking structures. Not entirely futuristic, mechanized structural solutions have been implemented as early as the 1920s in the U.S.

Automated and mechanical parking structures are defined by two types of dynamic movement: vertical lifts and horizontal shuttles. Technologies by type include puzzle parking, stackers, freight elevators, and fully computerized automated parking. Puzzle parking consists of two to three levels of stalls that run one to three stalls deep. Vehicles run on steel platforms that move horizontally and vertically. A single space remains empty.

Like a puzzle, platforms shuffle to get the desired vehicle to the exit position. Stackers utilize steel platforms to allow two to three vehicles in a single parking space. Freight

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[20] Phil Haisley, "*Pushing the Building Envelope Below Grade*" (RCI Interface Magazine , 2001) 8.

elevators following its given name is commonly implemented as a retrofit where access is needed to building space that has been converted to parking.

Similarities of the arriving sequence with the traditional garage end once the user has entered the automated parking structure. Drivers position the vehicle on a hidden ramp and turntable. The vehicle is then analyzed by sensors to determine the size and overall shape. The driver turns off the vehicle and retrieves a ticket from the automated machine that identifies the parked location of the vehicle. Once the individual exits from the immediate area, the robotic building uses electromechanical components to safely whisk the car away to the nearest available empty spot. Upon return, the ticket machine reads the ticket and retrieves the car in approximately 1 to 2.5 minutes on average.

Rapid Transit

With the city of Honolulu implementing the rail as a means of rapid transit, residents and visitors alike will soon have an alternative mode of transportation extending from West Oahu to Downtown Honolulu. The Iwilei Station will be the main access hub bringing pedestrian visitors from around the island to the Cannery Site.

History

Rapid transit in the city dates back to 1863. The development of the London Underground resulted in technology that was quickly spread throughout Europe and the United States. To date, more than 160 cities have implemented rapid transit into the urban environment, the largest growth is currently occurring throughout Asia. Today, rapid transit systems account for more than 4,900 miles of track and over 7,000 stations worldwide.

As the public sector came to the realization that building more highways will not solve transportation problems, Congress birthed the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. This act essentially sought to change the direction of transportation planning by expanding the scope beyond highways, and to mold a

transportation system that was both economically efficient and environmentally sound. Congress has since created two other acts to improve and maintain the surface transportation infrastructure including the Transportation Equity Act for the 21st Century (TEA-21) and the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).[21]

New train systems within dense walkable cities entail a more livable, sustainable community. A book entitled *Transit Villages in the 21st Century* by Michael S. Bernick and Robert Burke Cervero delves into best methods to create transit communities with civic plazas near entrances, pleasant walking environments, diversity in housing, compactness, and a "sense of place" that will reduce gridlock and spur growth. Transit villages are "partly about creating a built form that encourages people to ride transit more often. However, equally important, it embraces goals related to neighborhood cohesion, social diversity, conservation, public safety, and community revitalization." [22]

In other words, transit villages are compact, mixed-use, walkable communities that are centered around a transit station that invites residents, workers, visitors, and shoppers to prefer mass transit as their means of transportation. Examples of transit-oriented mixed-use developments include Peterkort Station near Portland Oregon, Pleasant Hill BART Station in San Francisco, California, and North Bethesda Town Center in Montgomery County, Maryland.

Similar to T*ransit Villages in the 21st Century*, *The New Transit Town* by editors Hank Dittmar and Gloria Ohland discuss transit-oriented development as an essential part in the urban fabric. However this book recognizes that transit and transit oriented

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[21] *Rapid Transit*. Encyclopedia Wikipedia. 27Feb. 2008 http://en.eikipedia.org/wiki/Rapid_transit

[22] Bernick, Michael St., and Robert B. Cervero. *Transit Villages in the 21st Century*. New York: McGraw-Hill Education, 1996.

development has its limitations and decides to take the middle path. The book fills a gap in the marketplace by evaluating the first generation of transit-oriented development by setting guidelines for the next generation.

New Transurbanism

Cities across America are following the unwavering pursuit of developing better communities. A mix of new train systems and dense walkable cities (New Transurbanism) entail a more livable, sustainable community that commands higher real estate prices. as they create destinations that are walkable and convenient. With the Iwilei rail station in close proximity of the site and the proposed dense mixed use program, the new proposed design for Dole Cannery is New Transurbanism.

New Urbanism is a relatively new international urban design movement. It rests on the principle of reordering the traditional built environment and integrating that environment into a complete community that promotes a restoration of the walkable mixed-use community. Placement of these new urbanism communities is key. Research has shown that properties within a 5-10 minute walk of a transit station sells for 20-25% more than properties further away. If the properties surrounding the transit station are that of new urbanist communities or part of a historic urban center (both true to the proposed design at the Cannery), prices are further increased. This alone supports that people are willing to pay more to avoid hassles associated with car ownership.

With the lack of daily exercise, the average American is now overweight. Transit oriented development provides an abundant amount of advantages. One such advantage is health. With regular use of mass transit, a reduction in health related issues including those caused by car exhaust and car accidents will be evident. General health will increase as these type of developments also promote the opportunity for users to walk or bike as a part of their daily routine.

Keys to Success

I. Create high quality pedestrian environment
II. Shops should front sidewalks containing businesses that are useful to the community
III. Have on-site weather protected benches, bike racks, showers, change facilities
IV. Higher density is important for success for neighborhood and mass transit systems and surrounding neighborhood

The primary benefit of these compact urban environments around transit stations is an enhanced mobility and environment where transit ridership is likely to increase. The use of mass transit will help relieve traffic congestion along the rail and improve air-quality where the once park-and-ride trips are now converted to walk-and-ride or bike-and-ride. In the Bay Area, residents arrive to the BART primarily by private automobile. A typical journey for the BART patron park-and-ride trip is an average distance of 5 miles with around 85% attributed to cold start carbon emissions. The compact transit village development will reduce the private car ridership and thusly reduce tailpipe emissions. This important in the United States; cities with mass transit systems like California, exceed federal and state clean air standards for ground level ozone and carbon monoxide.

These developments must be inviting and of a high quality pedestrian friendly environment with a mix of land uses. Typical guidelines to create the pedestrian friendly environment include narrow tree lined streets, wide sidewalks, an absence of surface parking lots and long building setbacks.

New Transurbanism serves as neighborhood revitalization as it offers a new approach to stimulating economic growth. It invites private investment by creating the conditions for financial gain from:

I. Foot traffic of commuters regularly heading to the stations

II. Value added of siting commercial buildings near viable transit nodes

III. Benefits of a well planned social urban environment

Developments populated by residents, worker, and shopkeepers also act as a continual security presence. Issues of public safety like those perceived in places vacated after 6pm and on the weekends are lesser in the village environment. Residents in particular are the most valuable assets in these environments. Public celebration may come in the form of a public plaza that leads to the station entrance. This place naturally becomes a community-gathering place for celebrations, parades, performances, and protests. These spaces are sustainable urbanism in that in the mornings they act as colorful farmers market, and on the weekends, concerts and shows could be held there. These types of uses and spaces are envisioned for the Dole Cannery through its abundance of outdoor public space. The key to this is that the transit station essentially functions as window to the rest of the region where it is physically associated with the village's major gathering place.

Bernick Cervero criteria:

I. Development extends roughly a quarter mile from a transit station, a distance that can be covered in about 5 minutes by foot
II. Centerpiece of the development is the transit station..civic and public spaces surround it
III. Transit station is what connects residents and workers to the rest of the region
IV. The surrounding public serve as a community gathering

Vertical Garden

[23]Vertical gardens have been a part of our landscape for centuries dating back to 3000BCE in the Mediterranean area where vines were a popular crop food for people in the region. Interest in the garden-city movement began in the late 19th century as one of the first ecological reactions to combat industrialization in urban areas. However, it wasn't until the 1980s did cities see a surge in the vertical garden. Germany in particular led the surge with help in the form of government incentives that sparked the creation of vertical gardening projects and research into the thermal benefits of the living wall. Twentieth century technology has since increased the ease of incorporating vertical gardens into our modern built environment through biowalls or hydroponic wall systems. For the purposes of this research/design the hydroponic wall system will be implemented because of its lightweight and soil free system that will not overwhelmingly increase the dead load on the existing structure.

Patrick Blanc, a French botanist first experimented with his trademark hydroponic wall system of two thin sheets of felt in the 1980s. Since then, the system has remained similar however, there has been a major advancement in the physical properties of the felt.

[24]Benefits of the hydroponic system on plant growth includes an efficient nutrient delivery, root establishment. In soil, a plant might expend 60% of its energy searching for food. With the hydroponic system its energy is saved resulting in a more lush and vibrant green wall that requires half the amount of recommended fertilizer. A healthier established root zone is achieved through two layers of root production that includes the

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[23] Blanc, Patrick, and Ve Lalot. The Vertical Garden: From Nature to the City. New York: W.W. Norton, 2008.

[24] "Benefits." Sage Vertical Gardens. Accessed October 10, 2014.

fine roots that infiltrate the porous felt medium searching for nutrients, while the structural roots fill the rear drainage mat, acting as a secondary rooting chamber.

The use of vertical gardening in the dense urban city as suggested in the book *Building Green: A Guide to Using Plants on Roofs, Walls, and Pavements*, allows designers to create a network of vegetation linking roofs, walls, courtyards, streets and open spaces. This ultimately brings back the vanishing green space of our dense urban cities. Doing so not only provides ecological and economic benefits as discussed in *Greenbacks from Green Roofs: Forging a New Industry in Canada, Status Report on Benefits, Barriers and Opportunities for Green Roof and Vertical Garden Technology Diffusion,* such as storm water management, mitigation of the heat island effect, and reducing air pollutants, but it also helps to provide a more aesthetically pleasing environment in which we work and live.

The desire for green space in our daily environment can be linked to motives of quality of life, health, economy, and nature. By creating these pleasant environments, we also create the conditions for pleasant meetings and relaxation as discussed in *Stress Recovery During Exposure to Natural and Urban Environments* that has shown that the recovery from stress and tiredness is positively influenced by natural greenery.

Cities can be transformed into living landscapes where dwellers and nature can take advantage of the numerous benefits that come from growing vegetation on and around buildings. Due to these benefits it is not only a fashionable gesture nor a cosmetic exercise, the greening of urban buildings is simply a highly rational thing to do.

Conclusion

Preserving industrial icons is important in maintaining the historic industrial character of a community. Industrial practices have changed dramatically with the shift toward globalization and inexpensive labor (in other parts of the world), leading to a decline in various industries. As a result of these circumstances, there truly is a large stock of derelict industrial buildings.

Industrial buildings are impressive architecturally for its sheer size, and were built with practicality in mind for production and efficiency. There are a few exceptions of industrial buildings designed by prominent architects, but with the majority of the buildings lacking any famous associations, many of these industrial buildings were historically ignored. Often overlooked due to the blighted surroundings, polluted landscape, and ordinary architecture, the building's rich architectural detailing, character defining features, and unique public spaces are often ignored. Rehabilitating these urban industrial neighborhoods is an issue at the forefront of urban development in the United States.

The successful adaptive reuse of an industrial building into a mixed use development can bring about redevelopment, heritage tourism, and new life into a community. These are the goals of the proposed design at the Dole Cannery.

The next chapter sheds light into precedents where the factory is saved. Factory 798, Oxo Tower, and The Lawrence Visitor Center is the result of the belief of its potential to be transformed for its rich architectural fabric.

The industrial heritage of a city is often overlooked, and along with it are the forgotten thousands of anonymous workers who were subjected to harsh working conditions in these factories. This leads us to ask the question: What has this building been and what could this building become? What should result is an answer where the conversion

does not hide the building's past and its character, and will further be discussed in both the next chapter, Chapter Three-Precedents, as well as Chapter Six-Conclusion.

Designing as a transit supported development posts unique opportunities of neighborhood revitalization, a decrease in road congestion and increase in transportation choices. Integration of transit stations within compact developments will reduce the private car ridership and thusly reduce tailpipe emissions. The Shops at Dole Cannery are within walking distance of the proposed rail transit stations and should reap the benefits of creating a transit oriented community with a compactness that will embrace the goals previously mentioned above. The following chapter provides a precedent study of one such development in the works at Salt in Kakaako that is designed as a transit oriented development.

Success of rapid transit comes from the improved mobility that people from all walks of life may participate in. Currently, the City of Honolulu is implementing 20 miles of elevated rail that will connect West Oahu with downtown Honolulu and Ala Moana Center (Refer to Chapter Four for a map of the rail line.) Goals outlined by the city include: improved mobility, reliability, economy, sustainability, and fairness.[25] However, implementing rail transit without acknowledging our dependency on the car would only disservice the potential for a site flourishing with consumers.

As density continues to increase, integration of the car and parking structure in the urban center remains a challenge. Parking structures commonly construed as unsightly and space consuming is fundamental in most urban developments. To address parking concerns at the project proposal, the existing parking structure will be expanded vertically and the location of automated parking structures will be suggested for future development. Automated parking is beneficial for the site for its smaller footprint and

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[25] "*What are the Goals of Honolulu Rail Transit*." Honolulu on the Move: Honolulu High-Capacity Transit Corridor Project. 28 Aug. 2010. http://www.honolulutransit.org

cubic area required to house a greater amount of cars. A 40% reduction of space is resultant of the removal of driving ramps and walkways for pedestrians. The reduction of space required is particularly relevant to Honolulu as land value is at a premium and will therefor be implemented into the design proposed in Chapter Five.

The following chapter explores five precedent studies where characteristics of adaptive reuse, innovative social programming, heritage tourism, transit oriented, and mixed use developments have been executed to some degree towards revitalization of existing communities. It is these characteristics that the proposed design of the Cannery aim to execute in Chapter Five-Design.

Chapter Two - Precedents

The following studies are presented as an introduction to provide background precedents where elements of the studies have been taken into account into the design presented in Chapter Five. The key findings are provided in the last section of this chapter titled *Conclusion.*

Factory 798, Beijing, China.

Introduction

Once a Chinese state-owned factory constructed in the 1950s in collaboration with East Germany, today this Bauhaus-influenced complex houses the most avant-garde art galleries in Beijing.

Figure 3 (above): Interior view of typical Bauhaus industrial building at Factory 798. Photo source: http://www.nytimes.com/2008/04/29/arts/design/29pace.html?_r=1&

Figure 4 (below): Art installation with iconic tower visible in background. Photo source: http://www.calias.net/#/short-stories/art-factory-798---beijing/factory11

During the height of the socialist era, these structures (as seen in Figure 3) were home to almost 20,000 workers who proudly produced a wide variety of military and civilian equipment to the communist world. In the 1980s, most of the factories were closed and abandoned until the first artists arrived in the late 1990s. Since then, a growing amount of artists, designers, and architects have occupied and reconstructed the empty factory spaces, gradually developing them into ateliers, galleries, art- and design centers (as seen in Figure 4), restaurants and bars.

Program

Boston, MA based architects Sasaki Associates took over the redevelopment in 2004 since the initial grassroots development in 1994 defined four objectives that implemented the framework for the revitalization that includes:

I. Emphasize the arts as a central theme for the district by creating major plazas as the focal points and flexible public spaces associated with key buildings, and incorporate linear landscape parks as key soft landscapes for the outdoor display of contemporary Chinese art.
II. Retain the essential qualities of the historic industrial aesthetic by restoring the unique character of the factories, preserving as many trees as possible, and using green zones for historic interpretation and ecological benefit.
III. Develop strategies that make the district more visible to the city, including enhancing the existing roadway network to make the district more accessible, creating multiple pedestrian and vehicular connections into the district, and establishing a pedestrian-only zone in the core of the district.
IV. Encourage a wide variety of arts-related and complementary uses to ensure a vibrant and dynamic district by strategically positioning key public program elements (theatre, conference center, art institute, children's museum, etc.) in highly visible locations, and using the roadway network as a framework for new urban development parcels, with higher density at the edges.

The critical method to ensure the districts success was connecting it to the context of the greater metropolitan area. Visibility and directional cues provide pedestrians and vehicles a clear hierarchy at the entrances (where art is at the forefront) that lead to central plazas. Multifunctional open spaces/plazas are used as flexible outdoor space where shows, art installations, and other events are used throughout the year.

Character

Its character, undeniably bohemian, with a backdrop of historic industrial architecture saved it from demolition, transforming into a desired neighborhood which further spurred a fast paced growth of adjacent properties. The district embraces the character of the existing buildings and its elements, providing visual iconic way finding elements. The preservation of the character and spirit of the district through its East German designed factory buildings and various relics including gasworks and railroad was and continues to be a priority with the area. Courtyards, corridors, and passageways that wind its way along narrow streets, and limited access has left little room for vehicular traffic congestion, ultimately promoting pedestrian oriented development.

Salt, Kakaako, HI

Introduction

The community of Kaka'ako of landowner Kamehameha Schools, is under progressive revitalization encompassing over 29 acres spread over nine blocks from Restaurant Row and Ward Center, to mauka of Ala Moana Boulevard (Refer to Figure 6 for site plan). The development will occur in phases over the next 15 years and could include up to 2,750 homes in seven high-rise towers and other low rise buildings.

Figure 5 (above): Artist rendering of Salt along Ala Moana Blvd. Photo source: http://www.ksbe.edu/commercialrealestate/key-market-kakaako.php

Figure 6 (below): Kamehameha Schools owned property slated for redevelopment. Photo source: http://www.ksbe.edu/commercialrealestate/key-market-kakaako.php

I had the opportunity to speak with the architect of record, Maurice Kondo, from INK on the efforts of this comeback specifically for the area known as Salt (as seen in Figure 5). Historically, the area of Kaka'ako was a place of innovation, commerce and sustainability. The name Salt is in reference to the once natural salt ponds that encompassed the low lying areas of Kaka'ako. Paul Kay, the director of real estate development at Kamehameha Schools states that the vision of this area is one that preserves the local spirit and the working class grit of the area's history, while creating a new, authentic, urban-island culture, and one that will continue to grow as a progressive catalyst for innovation and become the epicenter of urban-island culture, creativity, art and the lifestyle that it represents.

Program

Currently under review is a request from Kamehameha Schools to the Hawaii Community Development Authority to increase the height of a new 267 stall parking structure by 20 feet which would shrink the structures footprint all the while creating a larger common area. What this allows is a greater number of stalls than required and the opportunity to provide a multi-modal improvement to provide priority to the pedestrian.

30-35 units will be similar to the existing tenants, but will also include dedicated space for artists' studios, and flexible open space for events and other tenant programming. Space will also be provided for "micro-tenants" that Kamehameha Schools define as small emerging local businesses without brick and mortar shops. The micro-tenants will be able to set up shop for short durations without the investment of commitment of a long-term lease.

PHASE I DEVELOPMENT INCLUDES[26]:

I. Six Eighty Ala Moana: Mixed-use building, 54 apartments & 8,000SF of commercial retail
II. 660 Ala Moana: Low-rise commercial spaces for local niche shops and businesses
III. Salt: Commercial gathering place named for historic salt ponds that once dominated the commercial industry in the early 1900s
IV. Planned Condominium by Alexander & Baldwin Properties: Located on the former Comp USA block.

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[26] "*Commercial Properties - Major Urban Redevelopment Areas*." Kamehameha Schools Commercial Real Estate. http://www.ksbe.edu/commercialrealestate/key-market-kakaako.php (accessed May 9, 2014).

Character

The four low-rise industrial warehouses bordered by Coral, Keawe, Auahi streets, and Ala Moana Boulevard, are slated for adaptive reuse transforming to a city block of dining, shopping, and community space. The buildings true character will be once again revealed through the curved lines of the Quonset roofs. Other warehouse structures will remain, and materials will include reclaimed wood and metal. 20,000 sqft of surface parking will be repurposed to an open-air central plaza that is connected to entry points on all four sides of the block.

Oxo Tower Wharf, London, UK

Introduction

An adaptive reuse project in London that I had the opportunity to visit in the Fall of 2007 is that of Oxo Tower Wharf located along the South Bank of the River Thames (visible in Figure 7). The building Art Deco in style has been a riverside landmark since the 1930s was originally a power station that was then reused as a processing plant owned by the Oxo Company.

Figure 7 (above): OXO Tower from across the River Thames. Photo source: http://cdn.ltstatic.com/2012/May/GG513563_942long.jpg

Figure 8 (below): Retail studio at Oxo Tower. Photo source: http://www.oxotower.co.uk/wp-content/uploads/2013/11/Oxotowerwharf_12-634x400.jpg

In the 1970s, the building was in severe disrepair and was largely derelict. In the 1980s the building was marked for demolition, but strong opposition from the community prevented its destruction. By the 1990s the site was redeveloped under the direction of the Coin Street Community Builders that began to transform the building to a mixed-use development, all the while keeping its architectural character in tact. It was designed by Lifschutz Davidson Sandilands and cost an estimated £20 at that time. The project was funded by a mixture of bank loans, CSCB equity, Housing Corporation grants, and English Partnerships. The wharf received a Building of the Year for Urban Regeneration Award in 1997 from the Royal Find Art Commission/BSkyB.[27]

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[27] "*Oxo Tower Wharf*." Coin Street Community Builders. http://coinstreet.org/what-we-do/our-developments/oxo-tower-wharf/ (accessed November 17, 2013).

Program

The program of Oxo Tower Wharf includes at the ground, first and second floors over 30 retail design studios (as seen in Figure 7), specialist shops, restaurants, cafes, bars, and galleries. The upper five floors are the 78 co-operative homes with the majority one or two bedrooms and a few three bedroom units. The rooftop is home to the OXO Tower Restaurant, Bar and Brasserie, and a free public viewing gallery.

The tower is also home to a few leading artist including ceramicist Bodo Sperlein, bespoke dressmaker Candy Anthony, and product designers Black+Blum.

Also of great use at the Tower is what is known as Bargehouse which was home to a museum until 2001. Today exhibitions and public and private events are held there. Future plans call for the development of permanent commercial uses.[28]

Character

The buildings most iconic element has an interesting story in how the designers initially failed at an attempt to install illuminated signs advertising the Oxo product. With the proposal rejected, the designers creatively installed four sets of three vertically aligned windows, that just so happens to be the shape of a circle, cross, and circle. The development, flanked by parks, allows visitors to follow a riverside walk up to the tower to explore the shops, restaurants, galleries, cafes, and studios.

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[28] "*Oxo Tower Wharf*." Coin Street Community Builders. http://coinstreet.org/what-we-do/our-developments/oxo-tower-wharf/ (accessed November 17, 2013).

Fifteen Apprentice Programme, London, UK

Introduction

Founded by renowned London Chef Jamie Oliver, the Fifteen London restaurant is pioneered by the Apprentice Programme for young people between the ages of 18-24. Roughly 200 applications are received per year and only 18 of those recruited. The Apprentices come from difficult backgrounds (must not be currently in education, employment, or training), but through grit and determination have seen them through against all odds through well developed instinct of self-reliance and engrained patterns of behavior.

Program

The program lasts for one year working up to six days a week through formal training, hands-on experience, sourcing trips to suppliers, and personal development activities and work experience.

Figure 9 (above): Jamie Oliver programme. Photo source: http://www.jamieoliver.com/the-fifteen-apprentice-programme/home/index

Figure 10 (below): Apprentice presenting to the public. Photo source: http://www.jamieoliver.com/the-fifteen-apprentice-programme/apprentices/gallery

Continued support is given to aide the Apprentices to make the transition to qualified chefs. This support comes in the form as housing, debt, relationship problems and anger management.[29]

An Outreach Programme is also available to schools, youth groups and individuals with a view to spreading passion for food and cooking, and to inform young people about opportunities in the restaurant industry and the Apprentice Programme. The Outreach Programme is done through inspirational talks, workshops, short courses, and taste testing in the Fifteen kitchen.

Need

To teach the apprentices the impact of their behavior on themselves and others and to be able to choose how they respond in the moment to any given situation positively. Objectives of the program include:

I. Strong enough to choose the behaviors they need at any given moment
II. Operate instinctively as part of a collective team
III. Deliver a product that is a unique culinary experience

Solution

To provide a new awareness of “Who Am I?”, “How do I behave and operate?”, “How does the way I behave affect the way others around me operate?” and importantly, “How do we work together powerfully?” through fun, inspiring, and engaging activities.[30]

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[29] "*The Programme*." The Fifteen Apprentice Programme. http://www.jamieoliver.com/the-fifteen-apprentice-programme/programme/apprentice_programme (accessed December 15, 2013).

[30] ibid

Lawrence Heritage State Park, Lawrence MA

Figure 11: Lawrence Heritage State Park. Photo source: http://en.wikipedia.org/wiki/File:Visitor_Center,_Lawrence_Heritage_State_Park,_Lawrence_MA.jpg

Figure 12: Lawrence Heritage Visitors Center. Photo source:http://www.lawrencehistory.org/timeline

Introduction

Lawrence Massachusetts, also known as "Immigrant City," is rich in heritage as a planned industrial city. Its residents proud of its past and future work together to continuously improve and revitalize Lawrence. Transformation can be seen in its downtown core through its former industrial mills adaptively reused into residential and alternative commercial spaces. Recreational green spaces in the city are achieved through a network of open spaces that link each neighborhood with distinct parks unique in character. One such park is the Lawrence Heritage State Park (as seen in Figure 9).

Program

Opened to the public in 1986, the Lawrence Heritage State Park follows under the Massachusetts state system of Heritage Parks with a broad mission to: preserve and reuse historic structures in the city: to celebrate local history and culture; to offer educational and cultural programming; to provide a community meeting space; to provide recreational green space in the city; to offer these amenities to locals and visitors, resulting as a catalyst for the city's revitalization.[31]

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[31] "*The Friends of Lawrence Heritage State Park*." Our History. http://www.lawrenceheritage.org/history (accessed April 11, 2014).

The success of the park can be seen through its expansion. The park began with a visitors center and has since expanded to include the Visitor Center Park, North Canal Walkway, Pemberton Park, Riverfront Park, and the Bashara Boathouse.

Character

Located within the park is the Lawrence Heritage Center (as seen in Figure 10). The Visitors Center, formally an 1840s mill worker boardinghouse, features its original beams and brickwork, and houses interactive exhibits that tell the history of the city along with stories of its mill workers, industry, and the role of the workers in the 1912 Bread and Roses Strike. Visitors are able to trace the 30 immigrant populations that settled there. Models of the mills and boarding houses further help visitors envision how the community once looked and functioned.[32]

[32] "*Lawrence Heritage State Park*." Lawrence Heritage State Park. http://www.mass.gov/eea/agencies/dcr/massparks/region-north/lawrence-heritage-state-park.html (accessed March 28, 2014).

Conclusion

The following key findings are elements that are to be proposed/featured in the design found in Chapter 5.

Community: Grassroots/Outreach Involvement

True to form of the intentions of developers and landowners explained in the literature review, profit has been the major factor influencing the decision to undertake adaptive reuse projects. The developments of Kakaako are an example of developer initiated community revitalization. Opposite of this approach are the grassroots movements like that of Factory 798, Oxo Tower, and Lawrence Heritage State Park where the significance of the cities history is recognized by its residents and is seen as key to linking its past to its future.

At Factory 798 we see an example where oppression of the arts and freedom of expression was the initial driving force for the development that lead the community to a grassroots movement. Where most sites are built with the support of local policy or public funds, 798 is an example of self development. Without public policy support or funding it developed into the most popular art center of China. Community support in the smallest form (in this case the art realm) is an example of a passion of the people as the catalyst for change and is something key to the success of the proposed design project.

Although Salt at Kakaako is developer initiated, they have turned to the community to aid in revitalizing the neighborhood through physical labor and involvement in initial planning stages through community meetings which gets the participants vested in their community. Similar to this project beginnings and community evolvement is Oxo Tower. The continued success of the Lawrence Heritage State Park is in large part due to The Friends of Lawrence Heritage State Park. This initial grassroots group has gradually

increased their activity to support several events per year, and also raises money to support park maintenance and improvements.

Development that comes from a grassroots movement like that of Factory 798, Salt, Oxo Tower, and the Lawrence Heritage State Park results in a community vested in its surroundings and encourages one to take pride and take care of their surroundings/ community. This type of heavy community involvement is something envisioned for the proposed project at the Dole Cannery from initial project inception to ongoing support and maintenance.

Display of Character/History

In 798, Oxo, and Lawrence, architecture did not undergo major renovations to alter the building's image to the point of the building losing its character or sense of place. In Factory 798, architectural elements are showcased and used as way finding elements.

Transit Oriented Development

The strength in the upcoming redevelopment in Kakaako is that of a Transit/Pedestrian Oriented Development (TOD or POD). It is in the waterfront redevelopment that all involved are looking to accomplish a POD around transit rich areas. Creating compact walkable communities near mass transit with a variety of program of mixed-use/high density and urban redevelopment is something to be implemented in the proposed project design.

Program: Mixed Use with Emphasis on Arts, History, and Social Programs

At 798, history and modern art and industry are the keys to its success. Interest in industrial heritage sites and the arts continues to be a draw for tourists of Beijing. From its initial stages of purely a living art community exclusive to those in the art realm, to a display art community filled with contemporary artists, 798 has transformed to an art business center with art events and commercial activities coexisting. It is these two interest points of culture (art and history) that will be highlighted through designated

programatic artist available units and informational “houses” that promote the arts and history of the site.

OXO is an example of a successful mix of uses at building scale (one use above another) where the uses are compatible and interact with each other positively. Here the restaurant takes the upper most floor to take advantage of the city views, followed by living units below, artist studios below that, and at ground level shops and restaurants. What is unique about this development is the concentration of retail studios for contemporary designers. What makes this place truly special is that the public has the opportunity to watch the designers at work and to commission or purchase products across multiple disciplines including fashion, fine art, furniture, textiles, jewelry, ceramics, and glass. It is this layering of mixed use within a building of public at ground level, semi private at midlevel, and private at upper most levels that will be utilized at the Cannery.

Design of program envisioned for the proposal in Chapter Five is not only limited to program of uses (i.e. commercial, residential, etc.), but to the use of the program as for example the Apprentice Programme. This uplifting program has presented itself as a tool to impact the Apprentices in ways so that they are more conscious of their own behavior, are able to embrace their strengths and change engrained patterns of behavior easily. They also have learned to operate as a team passionate about supporting and mentoring each other. The end result of the program is a positive awareness from an “I am” mentality to something professional and effective “We are.” They become participating members of society and are living examples of change. It is this type of character developmental program that is envisioned as the backbone of the project’s public/private partnership.

It is my intention through the implementation of the above mentioned elements, that the project proposal celebrates and enhances civic spaces to promote culture, ecology, and social sustainability resulting in social uplift and bringing people together.

Chapter Three Site Analysis of Dole Cannery, Honolulu, HI

Note: In lieu of the terminology of directional cardinal points (N,E,S,W), this document will refer to the local terms of mauka (towards the mountain), makai (towards the ocean), ewa (away from Diamond Head crater), and Diamond Head (towards Diamond Head crater).

Site Introduction

Located adjacent to Iwilei is the Honolulu Harbor where the City and County of Honolulu was developed and urbanized in an outward fashion over the course of modern history. It is this harbor that brought the Honolulu Rail Co. and later the Dole Cannery to the district of Iwilei. With the closing of production at the cannery in 1991, the site has since struggled to find its identity and successfully attract visitors.

Geography

The geography of Iwilei is that of mostly low-lying coastal flats inland of Kapalama Basin and Honolulu Harbor and less than a third of a mile away from shore. Elevations range from 5-6 feet above sea level. Annually, rainfall averages about 29-31 inches. The topography today is generally flat and of an urban landscape. Vegetation is minimal and primarily landscaped with non-indigenous tress, shrubs, and ground cover.[33]

33 "*HHCTCP City Center (Section 4) AIS Report, Vol. IV B*." Honolulu Rail Transit Project. http://www.honolulutransit.org.

Historic Land Use

The area of Iwilei from its very beginnings was marginalized as a red lights district/ industrial zone. Stories around the time of Captain Cook told of how the sailors paid for Hawaiian women with one iron nail.

Iwilei, which once comprised of fishponds, was deemed to have greater purpose under Kamehameha as a center for trade due to its deep harbors that could serve the deep-draft of European sailing ships. The first wharf was built at the foot of Nuuanu Street in 1837 around the same time as Honolulu began to develop and name its streets.

What we know as Iwilei Road today once ran between Kawa and Kuwili fishponds. Its original name, Prison Road, was given because of a large coral-rock jail that jutted out between the fishponds. The jail called The Reef, had a commanding view from the roof where many a photos had been taken.

On November 16th, 1889, Benjamin Franklin Dillingham opened the Oahu Railway & Land with its eastern depot of the Honolulu to Aiea line near where the 1927 Oahu Rail & Line building still stands today (corner of North King Street and Iwilei Road). Businesses began to fill the fish ponds with coral and earth as a boomtown of cheap shoddy buildings began to consume the area. The business was a red-light district full of brothels of Japanese and American prostitutes. Prostitution went as far back to the times of Captain Cooke where sailors would purchase Hawaiian women for one iron nail.

Author William Somerset Maugham wrote of Iwilei:

> “You go down side-streets by the harbour, in the darkness, across a rickety bridge, and you come to a road, all ruts and holes; a little farther … there is a certain stir, an air of expectant agitation; you turn down a narrow alley, either to the right or to the left, and find yourself in the district… . The pretty bungalows are

divided into two lodgings; each is inhabited by a woman, and each consists of two rooms and a kitchenette."

It was a prostitute from Iwilei that Somerset had a chance encounter on a ship to Pago Pago, Samoa that he wrote his most famous short story Rain, that has since been adopted into three films and a Broadway show.

Rampant with venereal disease, the legislature tried to control the area with a stockade of five entrances where police patrolled to control the men. By 1916, the red-light district officially closed. In the 1920s Iwilei then became known for its large and small businesses with the crowning industry being the Dole Pineapple plant that stood there for nearly 75 years.[34]

Dole Cannery Then

James D. Dole formed the Hawaiian Pineapple Co. on December 4th, 1901. Under his role as president elect of the company, the output of canned pineapple increased exponentially from 9,800 in 1903 to 186,700 in 1907. The large increase in production was largely in part to the expansion of the Wahiawa cannery to the second location in Iwilei. The decision for this move is credited to Joseph H. Hunt who was the largest shareholder of the company. Although he was neither an officer or director of the company, Hunt did play an active role in the strategic development of the company. Transportation of the goods remained a concern of the cannery where normal travel time clocked in at 5.5 hours. With an extension of the railroad and a signed long-term freight contract with the railway, travel time was reduced by two hours to three and a half via Pearl City. This extension allowed the cannery to employ 200 workers at its new Iwilei location that opened for production in 1907. At about the same time, the American Can

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[34] Hawkins, Richard A.. "*Pineapple Fever." In A Pacific Industry the History of Pineapple Canning in Hawaii*. London: I.B. Tauris, 2011. 15-25.

Co. that had a monopoly of the market for manufacturing tin cans in Hawaii constructed a six story warehouse at the Hawaiian Pineapple Co.'s new cannery at Iwilei.[35]

By the 1930s, Hawaii led the world in canned pineapple production. Production and sales peaked in 1957, but the establishment of the Philippine Packing Corporation PPC in the Philippines in 1937 set forth the decline of the Hawaiian industry. Expansion of the (PPC) cannery in 1964 and the establishment of a Thailand cannery in 1972 with labor costs one tenth of those in Hawaii sped the decline that eventually lead to the demise of the Hawaiian canneries and the closure of the Iwilei cannery in 1991.[36]

The cannery buildings at Iwilei have since been adaptively reused to a mixed-use facility of shopping, theater, and office venues.

Social Context

Iwilei is part of the more commonly area known as Kalihi/Farrington area, a community of over 46,000 residents. In addition to Iwilei, Kalihi includes Alewa Heights, Kalihi Kai, Kalihi Uka, Kalihi Valley, Kalihi Waena, and parts of Kamehameha Heights, Kapalama and Palama.[37]

This area has a high proportion of residents who are elderly and are living with family members, and is ranked third-highest in the State for disabilities among those aged 21-64. The majority of senior renters are low income with a high school education or lower. A larger than average of the residents are Filipino (46.7%), Asians (65.8), and foreign born immigrants (15.6%). Foreign-born individuals fall under a wide age range. Some have a high school or college education, and they work in a variety of

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[35] Hawkins, Richard A.. *"Pineapple Fever." In A Pacific Industry the History of Pineapple Canning in Hawaii*. London: I.B. Tauris, 2011. 15-25.

[36] Bartholomew, Duane P., Richard A. Hawkins, and Johnny A. Lopez. "*Hawaii Pineapple: The Rise and Fall of an Industry*." HortScience 47, no. 10 (2012): 1390-1398.

[37] "*Center on the Family*." Center on the Family. http://uhfamily.hawaii.edu/index.aspx

occupations. Kalihi also holds the second-largest area of Other Pacific Islanders in the State.[38]

Per capita income is in the lowest 25% Statewide with a higher number of unemployment, welfare and food stamp recipients, and lower levels of home ownership than the State as a whole.[39]

According to a Statewide survey on community disorganization (such as graffiti and fighting), more than half of the adolescents reported low family attachment, and poor parental supervision. Adults in the Kalihi area with a high school diploma are the lowest in the State. Third graders testing poorly on the SAT test is also high. Compared to other communities, fewer seniors graduate from high school and attend college. However, the majority of the adolescents surveyed that they value education, and that parents reported that they are involved in their children's schools. Teacher turnover is low and a higher percentage of teachers have advanced degrees than in other communities. Communities across the State were assessed for strength of community. Indicators for the assessment included child, family, and community strengths. Of the 42 communities, Kalihi was ranked at 41 with a low score on the protection list meaning that children are more likely to not have been nurtured and doing well in school, families that are unhealthy, and a community that is not economically vital.[40]

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[38] "*Center on the Family*." Center on the Family. http://uhfamily.hawaii.edu/index.aspx

[39] ibid

[40] ibid

Aspects of Kalihi Area Community	Farrington Area	Honolulu County	State of Hawaii
Number of families			
Average household size	4.1	3.0	2.9
Adolescents reporting close family ties	36.1%	45.0%	46.2%
Adolescents reporting foor parental supervision	53.5%	45.7%	46.3%
Persons receiving Temporary Assistance to Needy Families	9.8%	5.0%	5.4%
Families receiving food stamps	26.9%	12.2%	13.2%
Adolescents reporting exposure to illicit drug use in their school and community	11.5%	12.4%	14.5%
Graduation rates of public school seniors	91.3%	94.8%	94.6%

Figure 13. Aspects of Kalihi Area Community[41]

In conclusion, the Kalihi area is in severe need to improve conditions for children and families. What the area needs is a system to promote strong, healthy families supported by their communities. This will require participation and a willingness of everyone in the community to work together to help those that are disadvantaged. Education and a support system through community outreach will help to change the community, but more importantly, elevate each member of the communities individual self worth.

[41] "*Center on the Family*." Center on the Family. http://uhfamily.hawaii.edu/index.aspx

Community Maps

Map 1. ZONES

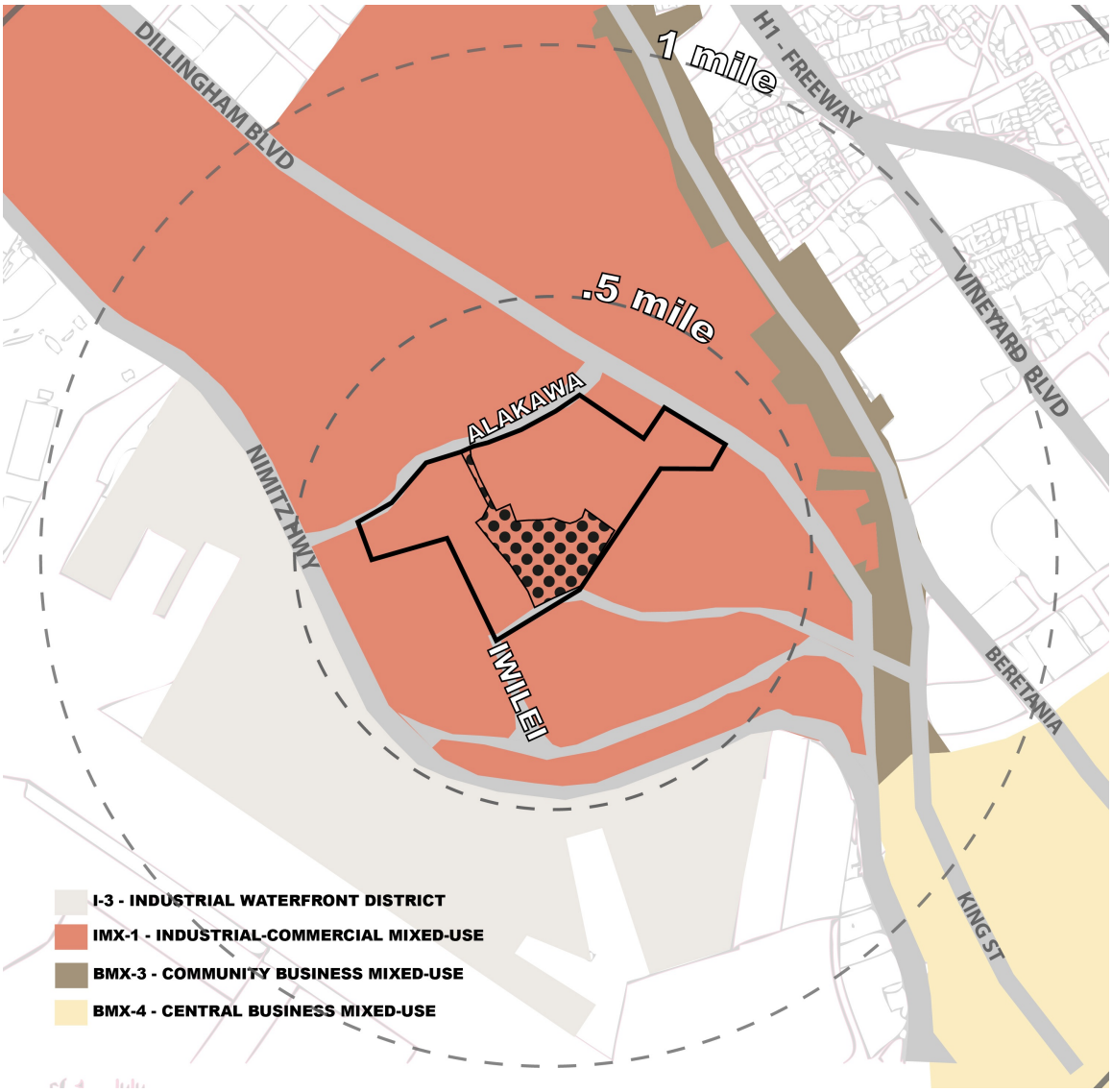

Figure 14. Iwilei Zoning Map

Existing zoning allows the property to be developed up to 150 feet and is zoned as IMX-1 Industrial-Commercial Mixed-Use, with no street setback. The immediate site is dominated by a mix of commercial and industrial units and lies within the Honolulu Development Plan Area of the Primary Urban Center. There are no listed lot restrictions

and is not located in a special district.[42] An advantage of IMX-1 zoning is the allowance of a wide variety of office and light industrial uses.

Under the Land Use Ordinance, IMX-1 permits[43]:

I. **Agricultural** - Products processing, minor, Sale and service of machinery used in agricultural production

II. **Animals** - Kennels, Commercial

III. **Commerce and Business** - Amusement and recreation facilities, Automobile sales and rentals, Bars/nightclubs/taverns, Business services, Cabarets, Catering establishments, Convenience stores, Dance or music schools, Data processing facilities, Drive-thru facilities, Eating establishments, Financial institutions, Home improvement centers, Laboratories (medical and research), Medical clinics, Office buildings, Personal services, Photographic processing, Photography studios, Plant nurseries, Real estate offices, Retail establishments, Self-storage facilities, Trade or convention center, Travel agencies, Veterinary establishments

IV. **Dwellings and Lodgings** - Dwellings, Hotels

V. **Industrial** - Base yards, Building or similar contracting and home improvement and furnishing services, and materials and equipment sales or distribution, Centralized mail and package handling facilities, Food manufacturing and processing, Motion picture and television production studios, Publishing plants, Repair establishments, Warehousing, Wholesaling and distribution

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[42] *Honolulu Internet Permit System - Tax Map Key Info*. http://dppweb.honolulu.gov/DPPWeb/Default.aspx?PossePresentation=TaxMapKeyInfo&PosseObjectId=12992105

[43] "*The Revised Ordinances of Honolulu - City and County of Honolulu*." The Revised Ordinances of Honolulu - City and County of Honolulu. http://www.honolulu.gov/ocs/roh.html (accessed March 2, 2014).

VI. **Outdoor Recreation** - Amusement facilities (outdoor), Marina accessories

VII. **Social and Civic Service** - Art galleries and museums, Day-care facilities, Hospitals, Meeting Facilities, Prisons, public uses and structures, Vocational schools, Theaters, Universities and colleges

VIII. **Transportation and Parking** - Airports, Automobile service stations, Car washing (mechanized), Commercial parking lots and garages, Helistops, Parking facilities

IX. **Utilities and Communications**

X. **Miscellaneous** - Use of historic structures, Joint development

Under the Hawaii Public Utilities Commission (PUC) Development Action Plan, it indicates the the area should be planned for higher density residential and mixed uses around the transit station. Another action plan called the Kalihi-Palama Action Plan in conjunction with the PUC Development Plan envision for the area a network of bikeways and pedestrian paths that connect community activities. Recommendations for the improvement of building facades fronting streets and improved sidewalks and landscape are also noted in both documents.[44]

[44] *City and County of Honolulu. Review of Current City and State Ordinances Honolulu High-Capacity Transit Corridor Project Final*. Honolulu, 2011.

Map 2. EDUCATION

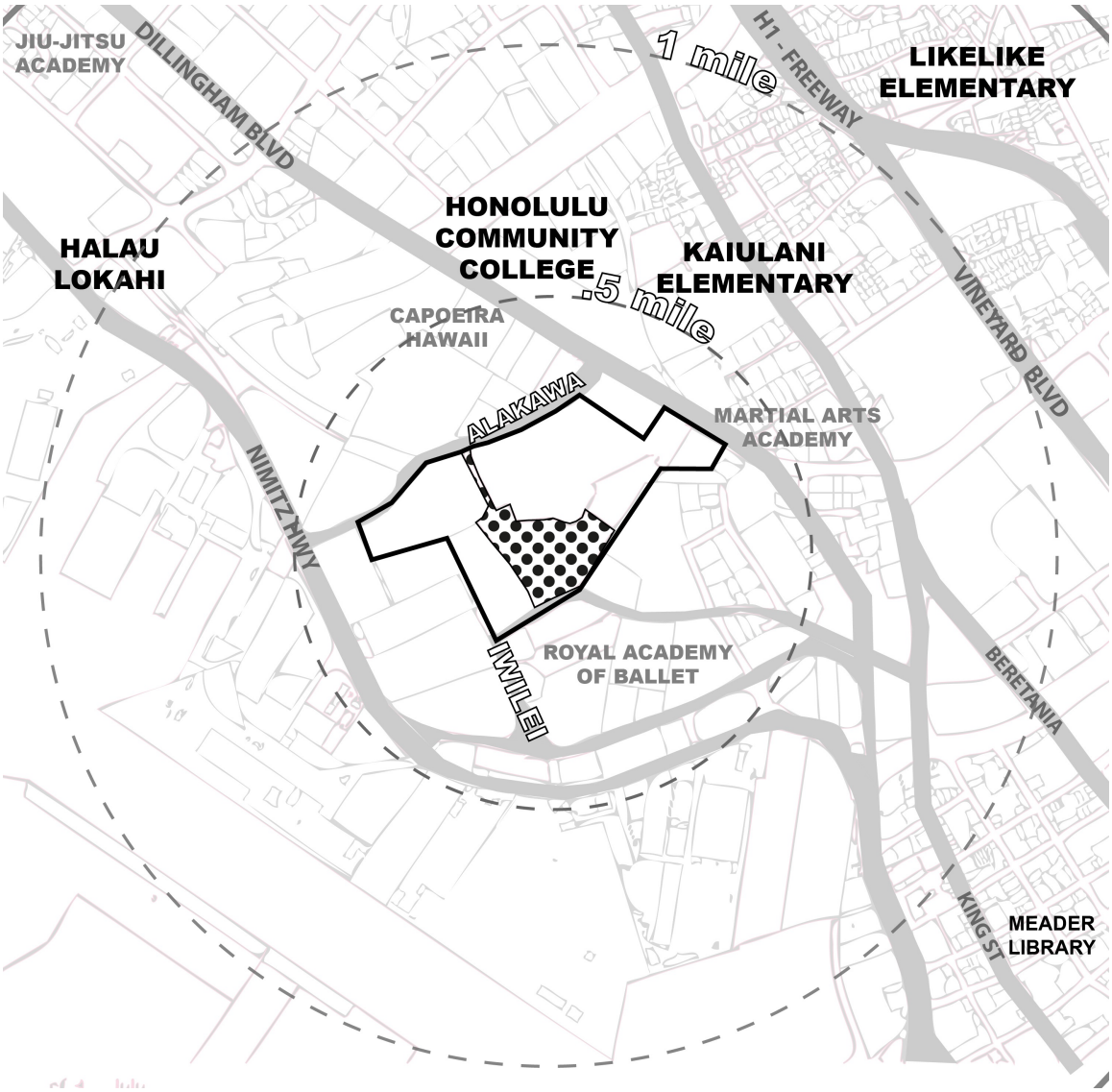

Figure 15. Iwilei Education Map

Farrington High School

The designated High School for this district is Governor Wallace Rider Farrington High School and is located a little over 1.5 miles from the site center's radius. Governor Wallace Rider Farrington High School has current enrollment of 2,374 students making it

the third largest public high school in the state of Hawaii.[45] [46] The school provides several integrated vocational programs for its students under a partnership with the University of Hawaii. Information on the programs are listed under Honolulu Community College later in this chapter.

Kaiulani Elementary School

Located a little over a half mile from the site is Kaiulani Elementary with an enrollment count of 421 students. The school provides before and after school programs, as well as targeted intervention programs during intersessions.[47] [48]

Halau Lokahi

Halau Lokahi is a K-12 charter school with an enrollment count of 239 students. The school teaches on the principals of performance-based models of education, where individual and collective progress and accomplishment is the end goal. The school prides itself from the alternative to traditional classroom learning by focusing on a learner-centered, experience-based curriculum with instruction and assessment focused on the inter-connection of land, ocean, heavens, and community.[49]

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45 "*Hawaii DOE* | *School Reports*." Hawaii DOE | School Reports. http://www.hawaiipublicschools.org/VisionForSuccess/SchoolDataAndReports/SchoolReports/Pages/home.aspx (accessed January 16, 2014).

46 "*Hawaii DOE* | *Farrington High*." Hawaii DOE | Farrington High. http://www.hawaiipublicschools.org/ParentsAndStudents/EnrollingInSchool/SchoolFinder/Pages/Farrington-High.aspx (accessed January 17, 2014).

47 "Hawaii DOE | School Reports." Hawaii DOE | School Reports. http://www.hawaiipublicschools.org/VisionForSuccess/SchoolDataAndReports/SchoolReports/Pages/home.aspx (accessed January 16, 2014).

48 "Hawaii DOE | Kaiulani Elementary." Hawaii DOE | Kaiulani Elementary. http://www.hawaiipublicschools.org/ParentsAndStudents/EnrollingInSchool/SchoolFinder/Pages/Kaiulani-Elementary.aspx (accessed January 17, 2014).

49 "Halau Lokahi Public Charter School." Halau Lokahi. http://www.halaulokahi.com (accessed January 17, 2014).

Honolulu Community College

As a part of the University of Hawaii System, Honolulu Community College has many programs that are focused toward trade or vocational jobs. Popular fields of study at the college include: industrial production tech, liberal arts and sciences, cosmetology, architectural drafting, electronics tech, automobile mechanics, welding, and HVAC.[50] Current enrollment is listed at 4,368 students.[51] The college also participates in special programs that include[52]:

I. **Bridge to Hope** - Is an education option for welfare recipients and First-to-Work participants who want to attend college as a means of achieving lifelong economic self-sufficiency. Bridge to Hope is a partnership program between the University of Hawaii and the Department of Human Services.[53]

II. **Construction Academy** - Partners with various DOE high schools to introduce high school students to the broad range of construction industry related careers and to provide opportunities to explore and develop the technical, academic, and employability skills necessary to make informed choices on possible career opportunities within the construction and other industries.[54]

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[50] "Honolulu Colleges, Universities, Trade and Vocational Schools." Colleges in Honolulu, Hawaii (HI). http://www.citytowninfo.com/places/hawaii/honolulu/colleges (accessed January 22, 2014).

[51] "Quick Facts." Honolulu Community College. http://www2.honolulu.hawaii.edu/?q=node/755 (accessed January 22, 2014).

[52] "Advising/Academic Counseling." Honolulu Community College. http://www2.honolulu.hawaii.edu/?q=node/17 (accessed January 22, 2014).

[53] "University of Hawaii at Manoa - Bridge To Hope." University of Hawaii at Manoa - Bridge To Hope. http://www.hawaii.edu/bridgetohope/ (accessed January 22, 2014).

[54] "Construction Academy." Honolulu Community College. http://www2.honolulu.hawaii.edu/?q=node/397 (accessed January 23, 2014).

III. **Early Admit** - Is a special admission and enrollment program for academically-accomplished or vocationally gifted high school juniors or seniors.

IV. **Jump Start/Running Start** - The program provides career and technical education opportunities to high school students whose interests are not currently being served by their high school.[55] This program is great because it offers students dual credit in that each community college course the student successfully completes, that student will earn high school credit toward graduation while working towards a college degree or certificate.

[55] "Jump Start - Overview." Jump Start - Overview. http://uhcc.hawaii.edu/jumpstart/ (accessed January 25, 2014).

Map 3. OUTREACH

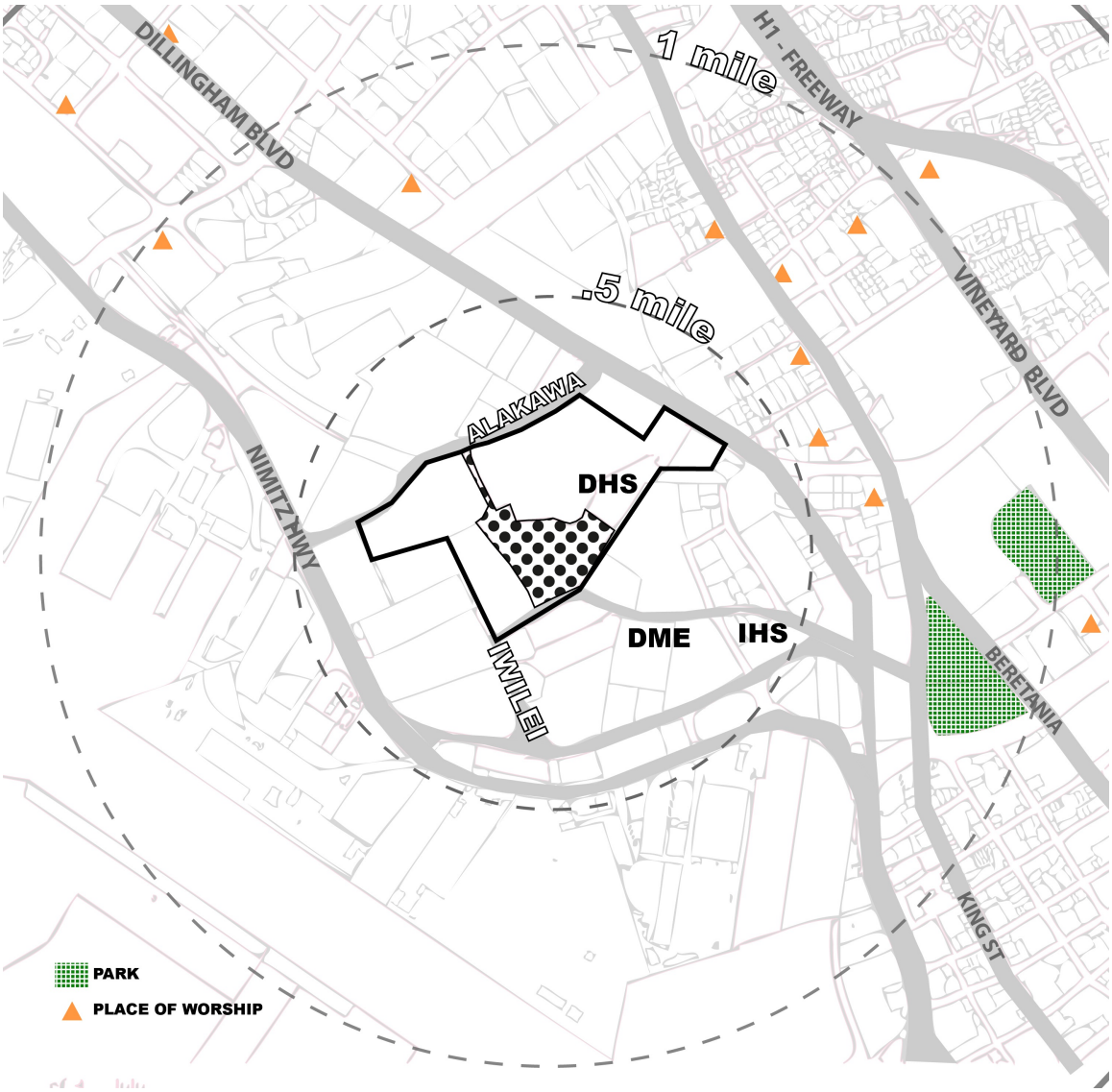

Figure 16. Iwilei Outreach Map

Within the half mile radius are three state provided departments.

The Department of Human Services (DHS) is located within project boundaries. For a detailed listing of services and programs provided, refer to the section later in this chapter titled: *Site Analysis - Within Project Boundaries.*

The Institue for Human Services (IHS) is located along Iwilei Rd. The IHS is primarily known as the emergency shelter and food for the homeless, but also provide services that include:[56]

I. Specialized Case Management

II. Community Food Programs

III. Children's Enrichment Services

IV. Outreach Services

V. Housing Placement Services

VI. Education and Employment Services

VII. Health Services

The Medical Examiners Office (MDE) lists a community outreach program that includes a tour with the objective of death prevention through education.

Aala Park (triangular) and Beretania Community Park (rectangular) are located within a mile radius of the site. Both parks are known to be frequented by the homeless and often undergo city cleanup efforts. The city removed the once undulating landscape of Aala Park leaving a flattened landscape to create a highly visible park discouraging illegal activities and the homeless from setting up tents.

Although there are no places of worship within a half mile radius, there are a total of 8 various places of worship.

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[56] "Our Mission." Institute for Human Services. http://www.ihshawaii.org/about/our-mission/ (accessed March 14, 2014).

Map 4. TRANSPORTATION

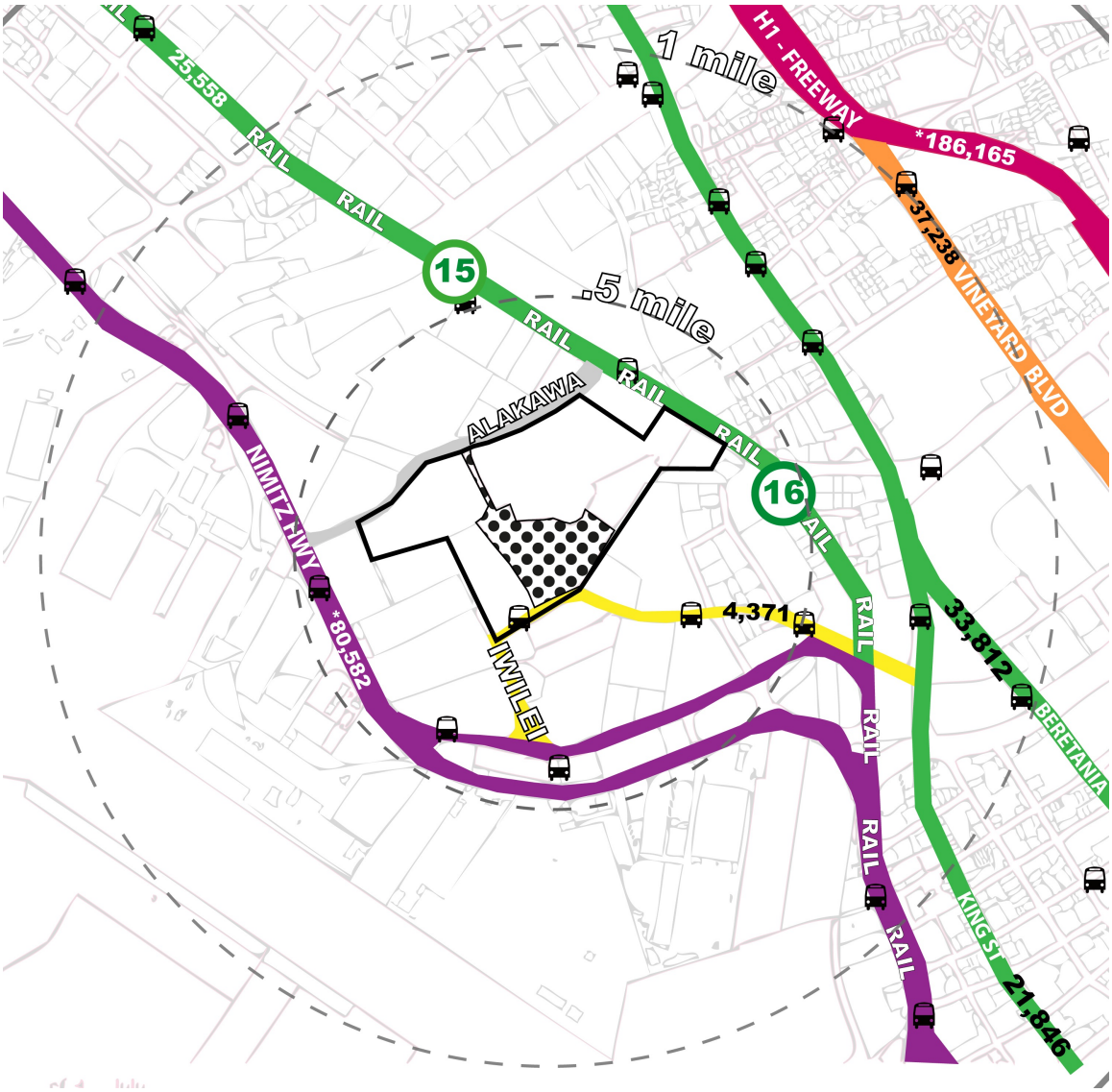

Figure 17. Iwilei Transportation Map

Nimitz Highway, a major vehicular corridor lies to makai end of the site with an estimated 80,582 commuters daily. Bordering the mauka end of the property is Dillingham Boulevard with an estimated 25,558 daily commuters. Iwilei Road has a considerably low amount of daily commuters at 4,371.

Public Transportation-Bus

The Bus, Honolulu's city bus routes include[57]:

I. Iwilei Road
   A. 19-Airport-Hickam
   B. 20-Airport-Pearlridge

II. Dillingham Boulevard
   A. 9-Navy-Nimitz Gate
   B. 40-Makaha Towers
   C. 42-Ewa Beach via Arizona Memorial
   D. 43 (weekdays only)-Waipahu, Alapai Transit Center
   E. 52-Wahiawa Haleiwa
   F. 62-Wahiawa-Heights
   G. 88A (weekdays only)-North Shore Express (PM), Honolulu (AM)

III. Nimitz Highway
   A. 19-Airport-Hickam, Waikiki Beach & Hotels
   B. 20-Airport-Pearlridge, Waikiki Beach & Hotels

Public Tansportation-Rail

Slated to complete construction in 2019, the Honolulu Rail line will follow along the corridor of Dillingham Boulevard. The rail line will run approximately 20 miles connecting east Kapolei, near the University of Hawaii-West Oahu campus, to Ala Moana Center. The rail will pass along the way: Waipahu, Leeward Community College, Pearl City, Pearlridge, Aloha Stadium, Salt Lake, Kalihi, Honolulu Community College, downtown Honolulu, and Kakaako, with a total of 21 proposed stations. The two rail stations to be located roughly a half mile from the site are Station 15-Kapalama, and Station 16-Iwilei.

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[57] "TheBus - Routes & Timetables." TheBus - Routes & Timetables. http://www.thebus.org/Route/Routes.asp (accessed March 16, 2014).

There are plans for possible future extensions that would include the University of Hawaii-Manoa, Waikiki, and Kalaeloa.

Ridership is estimated at 119,600 weekday passenger trips by the year 2030 and will operate from 4am to 12am daily. The trains are scheduled to arrive at peak times roughly every five minutes, and about every ten minutes during off-peak hours.[58]

[58] "TheBus - Routes & Timetables." TheBus - Routes & Timetables. http://www.thebus.org/Route/Routes.asp (accessed March 16, 2014).

Map 5. HISTORICAL

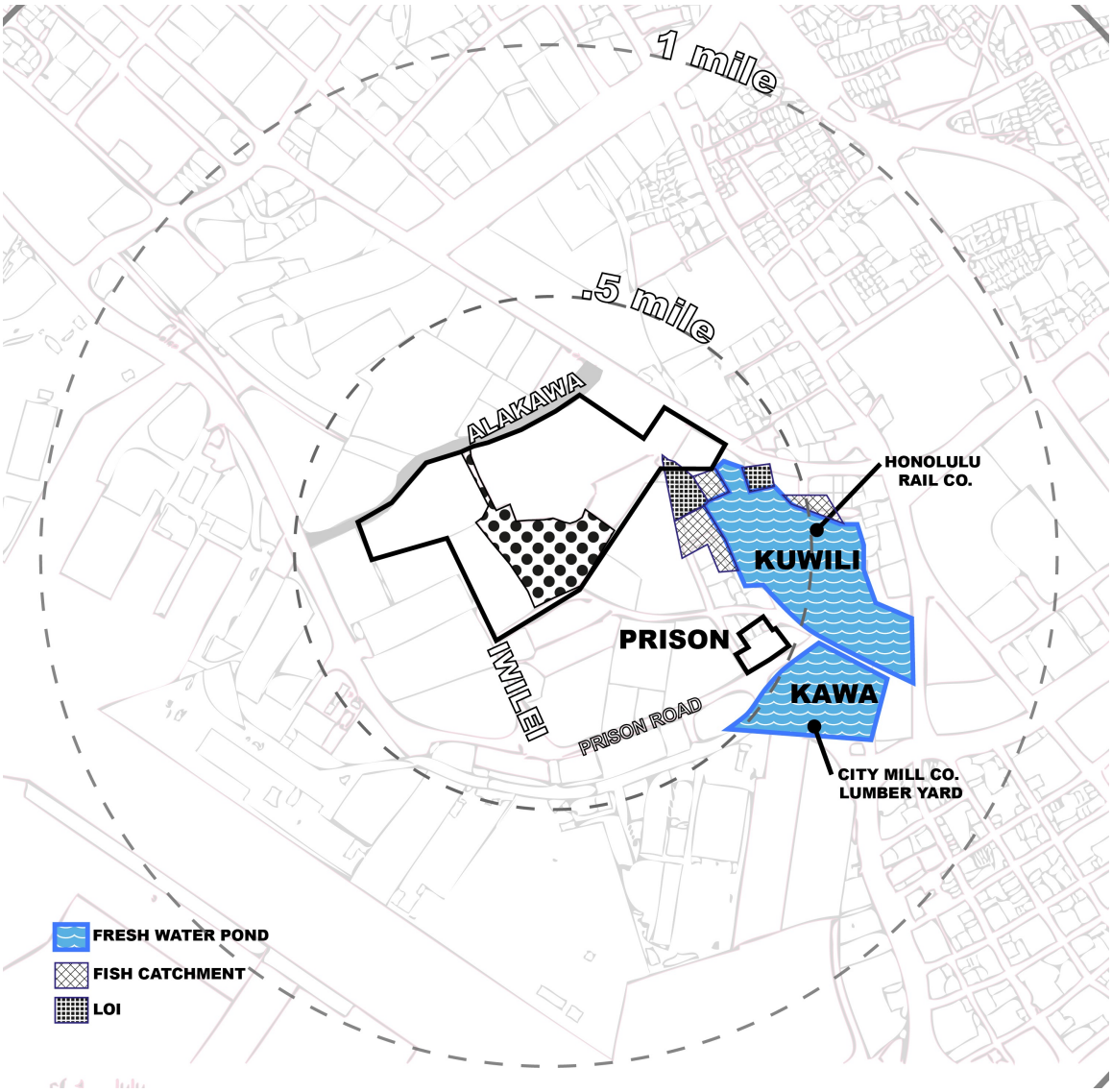

Figure 18. Iwilei Historical Map

The area of Iwilei lies within the Honolulu Ahupua'a and within close proximity to the Kapalama Ahupa'a directly ewa.

Traditionally known as Kou, Honolulu had a long tradition as a royal center where ali'i would meet and entertain. Situated within Iwilei were two fishponds Kuwili and Kawa that covered nearly the entire length of Iwilei. Kuwili fishpond was located in the upper

half of Iwilei with its northwestern border used as the border between Iwilei and East Kapalama. Kawa fishpond was located at the southern end of Iwilei, and its southern border was used at the designated border between Iwilei and Downtown Waterfront. Kuwili “stand swirling” was originally mentioned in the legend of Ku’ula (fish God of Hawaii), where Ku’ulas son, ‘Ai’Ai gave a sacred fishhook to his son Puniaiki who used it to summon a school of aku to Honolulu Harbor. There is no information on Kawa Fishpond other than the translation of a precipice or leaping place or the pool below a precipice into which swimmers leap.[59] [60]

These ponds were an important resource for the people of the area. The land offered desirable environmental conditions for traditional Hawaiian subsistence practices. The floodplain allowed the development of an extensive taro lo’i system, and the protected shoreline and reef would have allowed for ease of ocean access to the productive near-shore fisheries.

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[59] Pukui, Mary Kawena, Samuel H. Elbert, and Esther T. Mookini. Place names of Hawaii. Rev. and enl. ed. Honolulu: University Press of Hawaii, 1974.

60 "HHCTCP City Center (Section 4) AIS Report, Vol. IV B." Honolulu Rail Transit Project. http://www.honolulutransit.org.

Site Analysis - Within Project Boundaries

Figure 19. Site analysis within project boundaries

The shopping center has generally good access and exposure fronting Alakawa and Iwilei Road and thusly is proximate to existing travel patterns and numerous access points. Because of the zoning and allowance of no setback, Iwilei Road is filled with industrial type buildings with no curb appeal. This, in combination with the lack of major points of interest, result in a location where the car is the primary mode of transportation.

Currently, there are no major points of interest along Iwilei Road with the exception being Regal Theaters at Dole Cannery directly across Iwilei Road. Instead, this road is used primarily to access the smaller side streets to the many smaller industrial warehouses in the immediate vicinity. There are no public vehicular entry points to access the site from Iwilei Road. A service road is directly located mauka of The Shops at Dole Cannery and a gated driveway (exit only) is located makai.

With two rail stations proposed roughly a half mile radius from the site, there will be a potential for an increase of pedestrian foot traffic. The ride from Station 16-Iwilei (located along Dillingham towards Diamond Head) will take an estimated six minutes to travel to Station 21- Ala Moana Center.

Within the project boundaries, the site is littered with parking to accommodate primarily the customers of Costco (this location is also ranked as the busiest Costco in the world). Home Depot has dedicated parking structure (two levels) for its customers that on average is filled to 50% capacity. With particular interest to this project is the Department of Human Services. The reasoning behind such interest in this government department is the services offered that will support the program envisioned for the design of the site.

801 Dillingham-Department of Human Services

The Department of Human Services has a considerably less of a draw to the site. The full list of divisions and services available include[61]:

I. **Benefit Employment & Support Services Division (BESSD)** - provides clients with monthly benefits that supplement such essentials as food, shelter, and child care, as well as employment support and work training, and dependency diversion and prevention. Services include:

[61] "State of Hawaii." Department of Human Services RSS. http://humanservices.hawaii.gov (accessed February 22, 2014).

A. Supplemental Nutrition Assistance Program (SNAP) (formerly Food Stamps)

B. Temporary Assistance for Needy Families (TANF/TAONF) Information

C. Low Income Home Energy Assistance (LIHEAP)

D. Child Care Program

E. General Assistance

F. Aid to the Aged, Blind, and Disabled

G. Homeless Programs & Information

H. Statewide Benefit Processing Centers

I. Federal Poverty Guidelines for Hawaii

II. **Social Services Division (SSD)** - Provides protection from abuse and neglect for children and dependent adults. Services include:

A. Adult Protective and Community Services Branch

B. Child Welfare Services (CWS)

C. Foster Care for Children in Hawaii

III. **Health-Med QUEST Division (MQD)** - Helps low-income adults and children obtain health coverage through managed care plans. Services include:

A. Medical Assistance

B. DHS/DOH Behavioral Health Services

IV. **Office of Youth Services (OYS)** - Provides and coordinates a continuum of services and programs for at-risk youth to prevent delinquency and reduce the incidence of recidivism. Services include:

A. Foster Youth Services - Independent Living Program

B. The Hawaii Juvenile Justice State Advisory Council

V. **Division of Vocational Rehabilitation (DVR)** - The DVR (formerly called the Vocational Rehabilitation Services for the Blind Division) is a state-federal program for individuals with disabilities who require assistance to prepare for, secure, retain or regain employment. Services include:

A. Statewide Independent Living Programs (ILP)

B. The State Rehabilitation Council

C. Hoopono Services for the Blind

D. Employment Training

VI. **Hawaii Public Housing Authority (HPHA)** - Helps provide low-income Hawaii residents with affordable housing and shelter without discrimination. Services include:

A. Housing Choice Voucher Program

VII. **Commission on the Status of Women (HSCSW)** - Works for the equality for women and girls in the state by acting as a catalyst for positive change through advocacy, education, collaboration and program development.

VIII. **Commision on Fatherhood** - Promotes healthy family relationships between parents and children

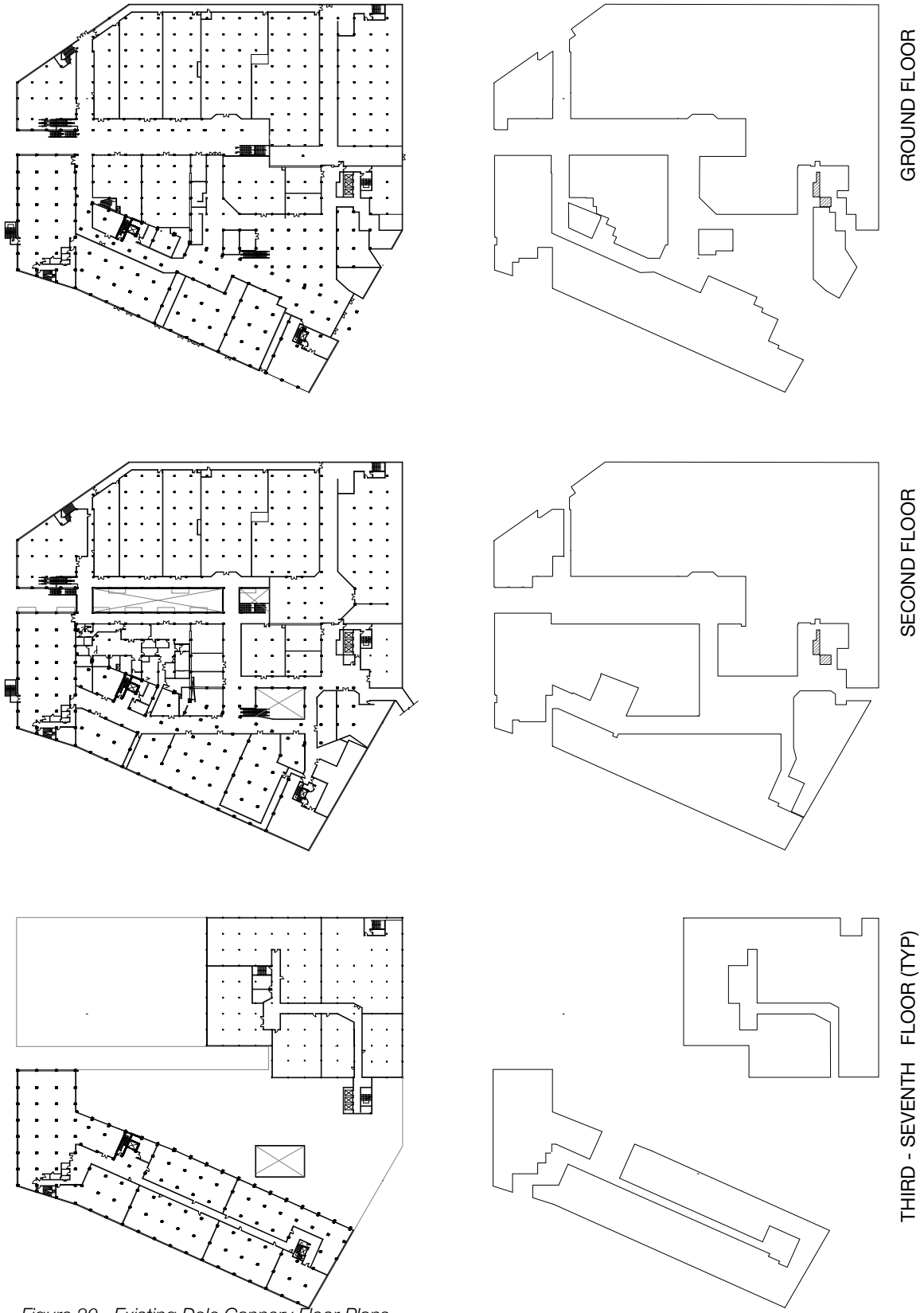


Figure 20. Existing Dole Cannery Floor Plans

The shops at Dole Cannery are located on the first three floors at the site of the once largest pineapple cannery in the world. Today, the shops at Dole Cannery are 81% occupied and currently list 18 units on the first three floors totaling 41,826SF available for lease. Units vary in size from 631SF to 20,000SF.

Its failure as a successful shopping venue may be attributed to its poor leasing options, basic lack of design (i.e. no visible street frontage), and basic lack of retail design. The homeless presence along Iwilei Road also deters pedestrians from accessing the site by foot.

The building is extremely difficult to navigate with its maze like layout. Simple way finding elements such as suite numbers and a map of the units are nowhere to be found. The only type of way finding material is the list of tenants near the building entrance and/ or elevators. Lighting is also an issue with the building either in harsh florescent lighting or dark hallways.

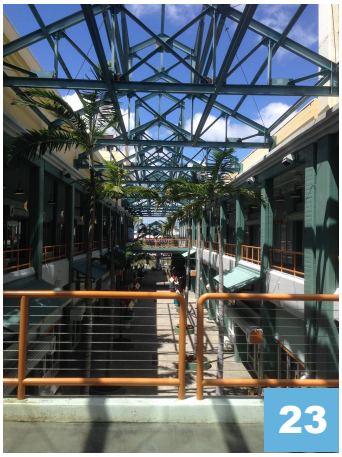
The steel structure allows a little play with the facade for enhanced street frontage. The upper floors have utilize a central corridor allowing panoramic views mauka, makai, and ewa of the site.

SITE PHOTOS

Figure 21 Shows the approach into the site via Dillingham Blvd. This is a current major access point/approach into the site. Future plans call for a Rail Station to be located along Dillingham Blvd which will increase foot traffic from this point exponentially. The State Department of Human Services is located in the building to the left.

Figure 22 This photo taken from the parking deck of the second floor at Home Depot shows expansive parking surrounding the site and low rise development beyond (with the exception of the parking structure Diamond Head of the site). This provides unobstructed views mauka, makai, and ewa. Costco is the building to the left with the stripe and the Dole Cannery building is located at photo center. Also visible from this vantage point is the empty lot adjacent to the Cannery Building at photo right.

The parking structure at Home Depot on average is at 50% capacity.



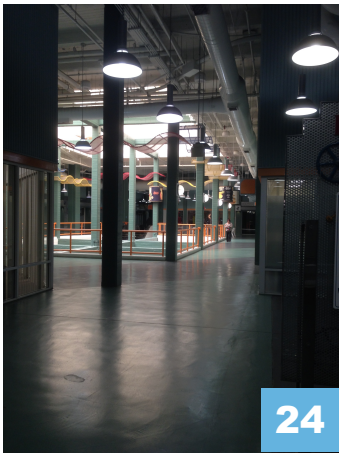


Figure 23 View from the second floor mall atrium looking ewa taken on a weekday at noon. The photo shows the lack of foot traffic at what should be peek foot traffic hour. Deep bays provide ample shade and protection from the elements along the storefront windows. Several units along the central atrium installed dark tint and/or graphic decals extremely limiting visibility form the outside.

Figure 24 Natural lighting provides a break from the rather dim/harsh lighting.

Figure 25 Memorabilia of the old Cannery is located primarily at ground level. Items include photos, tools and other miscellaneous items typically used at the old Cannery. Displays are often located behind the curtain wall of vacant tenant spaces.

Figure 26 View of the third floor rooftop from the sixth floor of the Dole Office Building.

Figure 27 Facade of HomeDepot taken from Alakawa St.

Figure 28 Interior of HomeDepot. Example of a typical warehouse layout with high ceilings and often read as one large space.

Figure 29 The State Department of Human Services.

Figure 30 Entry point to Costco

Chapter Four - Design

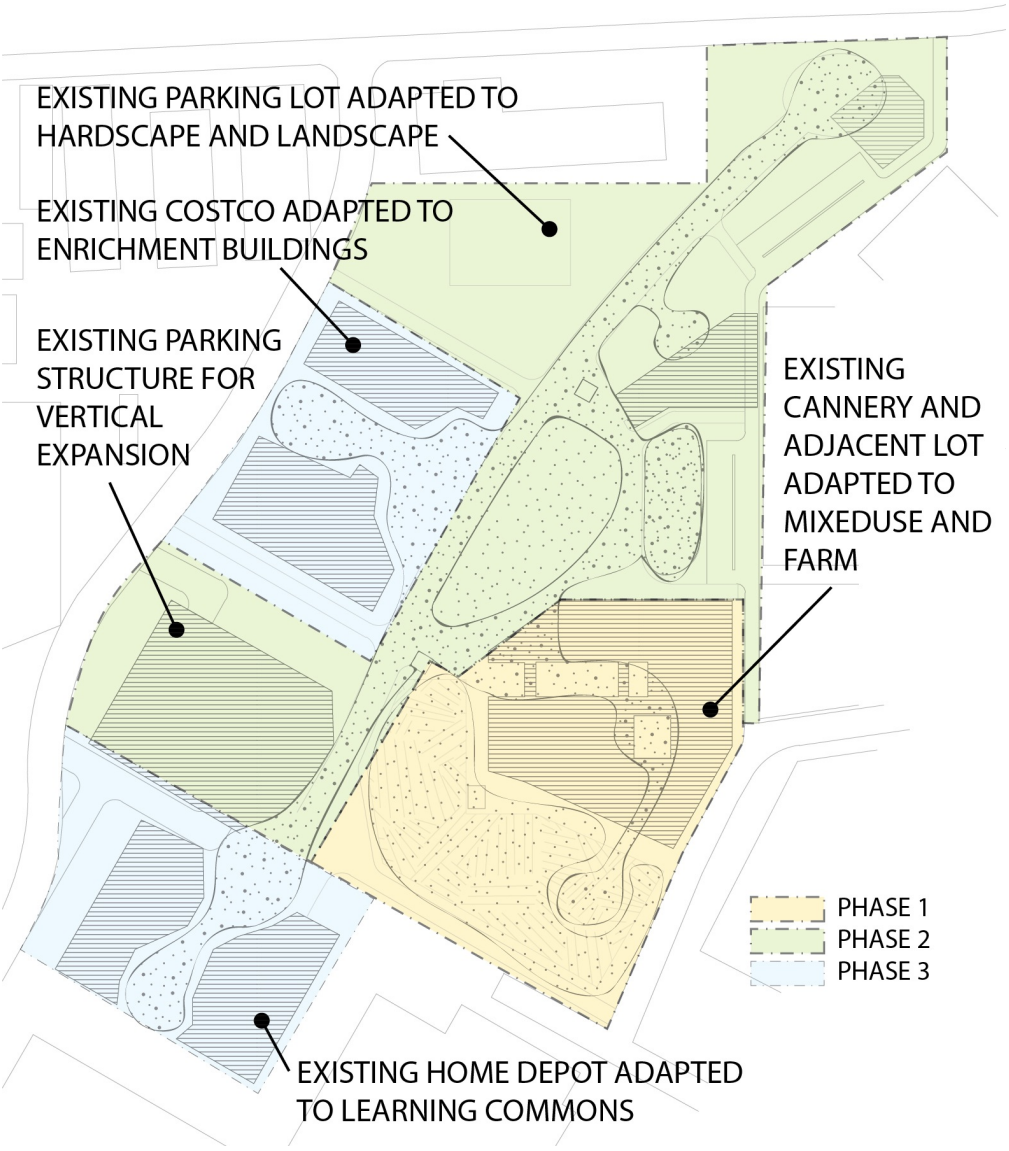


Figure 31. Site Phasing Diagram

Phasing

The project is proposed in three phases: (Phase 1) development of the cannery and adjacent lot for farming (Phase 2) expansion of the existing parking lot near Home Depot to accommodate the relocation of Costco parking to landscape (Phase 3) conversion of Costco and Home Depot to the Enrichment and Learning Commons. Although the project is proposed in three phases, the success of the program need only implement Phase 1.

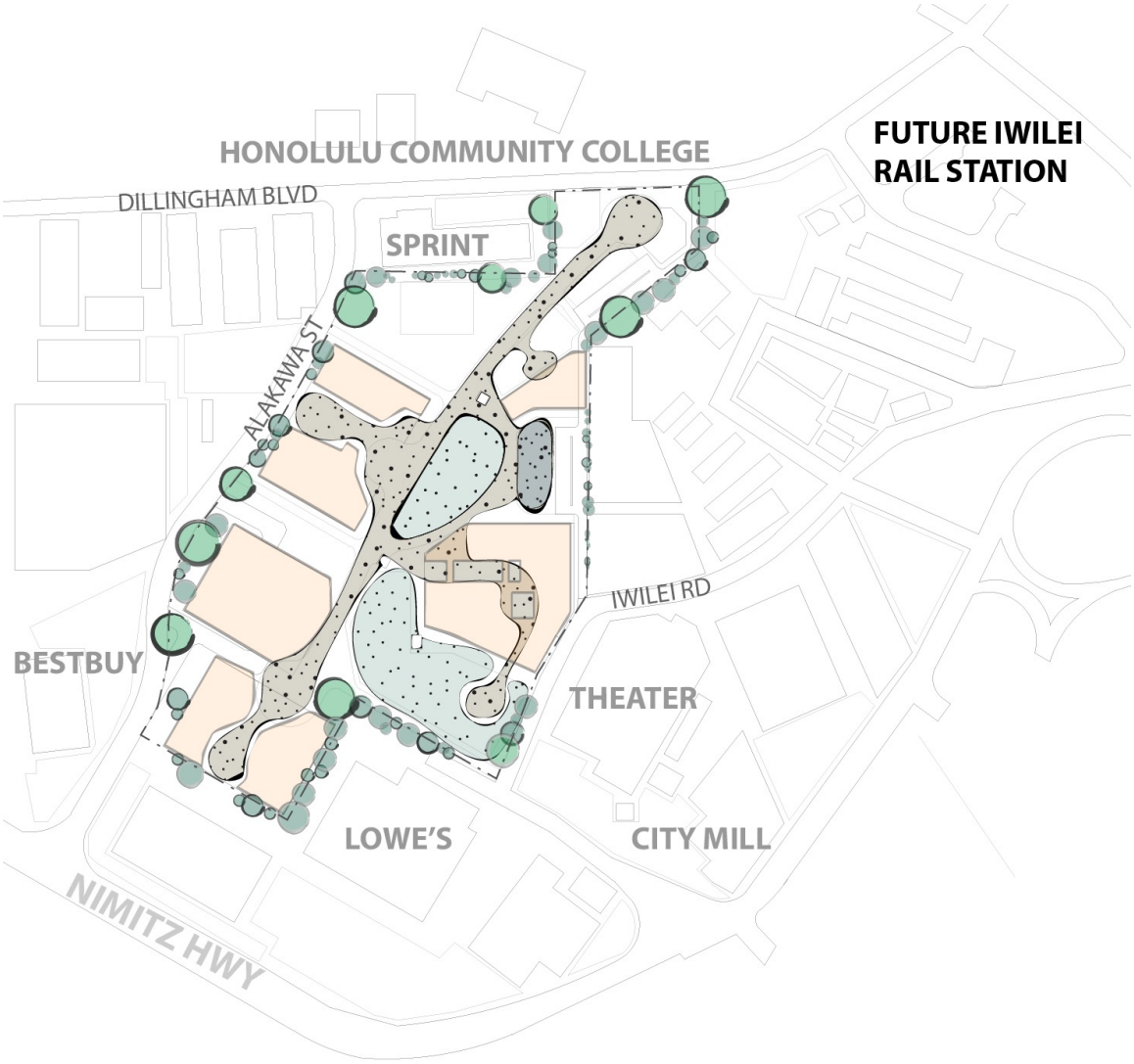


Figure 32. Site Plan with nearby points of interest.

Proposed site plan with nearby points of interest and future location of the Honolulu Rail Iwilei Station.

Figure 33. Site Plan within project boundaries

Access

The site is designed with pedestrian/bicycle access as the primary method of transportation to and around the site. Paths range in size and are capable of accommodating bicycles. Access through the site has been enhanced with an added two lane 25' wide road connecting Iwilei Rd and Dillingham Blvd along the sites Diamond Head border. Two parking lots totaling 88 stalls will be located along the new road. If additional parking is required, the two parking lots are to be replaced with the use of automated parking to accommodate an exponential amount of parking stalls with little to no footprint. The existing parking lot at Home Depot is to remain and will be expanded vertically to accommodate parking demand for the site.

Commercial

Envisioned for the site on first approach from the major access point from Dillingham Boulevard is a permanent commercial unit that will sell various wares crafted by the residents/program participants. Three major temporary structure (tents) locations will also be located at the entrance to draw in the passer-by along Dillingham Boulevard. When events are not scheduled, the space becomes a large open grass field allowing a visual connection from the Dillingham border to the other end of site where it visually terminates at the proposed Library/Cafe.

Department of Human Services

The Department of Human Services is to remain on site. To accommodate the 20' of building lost to the implementation of an access road, one or two programs will be relocated to the second floor of the Dole Cannery building.

Informational Buildings

Two informational buildings, each with an estimated 900SF are to be located along the site's main axis. The informational buildings will provide the historical background of the site and also touch on the programs and ecology of the site. The buildings are envisioned as a highly visible location where information of the site's socio-ecological programs and history are delivered by program participants (docents).

Enrichment Center

The Enrichment Center will be the main hub of learning at the site. Building program is to include two full commercial kitchens (one designated for classroom type learning and another for the program supported restaurant). The two kitchens are provided so that classes may continue to be offered during restaurant operating hours. Classrooms in the form of Multi-purpose rooms will be available for the community at large for use such as neighborhood board meetings, night general education classes, etc.

Learning Commons

The former Home Depot will now be the location of the community library and cafe.

Dole Cannery

The Dole Cannery will contain a mix of retail/commercial/artist units at ground level, offices at second, and living quarters from floors 3-7. For further details on the program at the Cannery Building, refer to the floor plan section following the site diagrams.

Landscape

Landscape will dominate the site with four main features: The Great Lawn, Fish Pond, Farm Land, and Soccer Field.

The Great Lawn is envisioned as a venue for larger outdoor events. A night market similar to the Honolulu Night Market in Kakaako is to included. Items harvested from the on site farms, food created by students that participate in the culinary program (but do not work at the on site restaurant), and various other program products or commercial tenants in the Cannery Building will be featured at the night market. Other events, such as movie nights, could take place on the Great Lawn. The nights chosen flick will be projected on the facade of the Enrichment Building.

Reminiscent of ancient times, a Fish Pond will once again be located in Iwilei. The fish will be raised for the consumption of both residents of the site and for the restaurant at the Enrichment Center. Harvesting schedules are to be established to prevent overfishing.

Similar to the Fish Pond, the Farm Land will be used to cultivate fruits and vegetables for the consumption for onsite programs and participants (farm to table). To support the farming program, a Community Building/Farm House will be located adjacent to the land for community garden and fish pond meetings. A processing space will be located at the ground floor within the Cannery Building near the Community Building/Farm House. The path between the farm and the Cannery will primarily be that of a reinforced soft path. The reinforced path will be the designated fire lane access to the Community Building.

The use of “soft path” materials will allow reinforced access without overwhelming the site with otherwise unsightly non porous pavement surfaces.

To promote a healthy lifestyle, a park will be located along the mauka edge with ample room to accommodate a National Federation of State High School regulated Soccer Field.

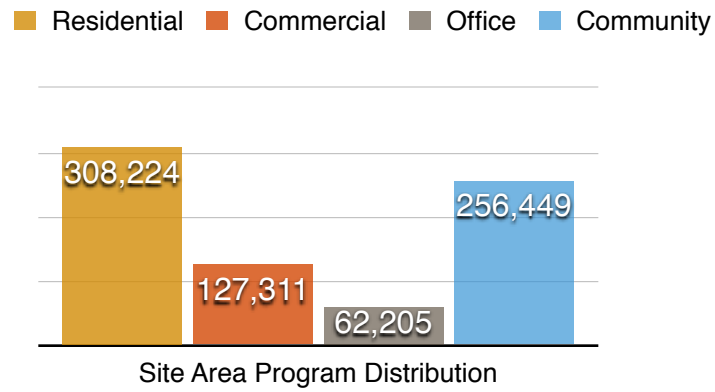


Figure 34. Chart of site area program distribution

Figure 31 shows the distribution of program area site wide. The Community category includes the Enrichment Centers, Learning Commons, Existing DHS building, expansion of the DHS offices to the Second Floor of the Cannery Building, and community program focused commercial spaces at the Ground Floor in the Cannery Building.

Site Diagrams

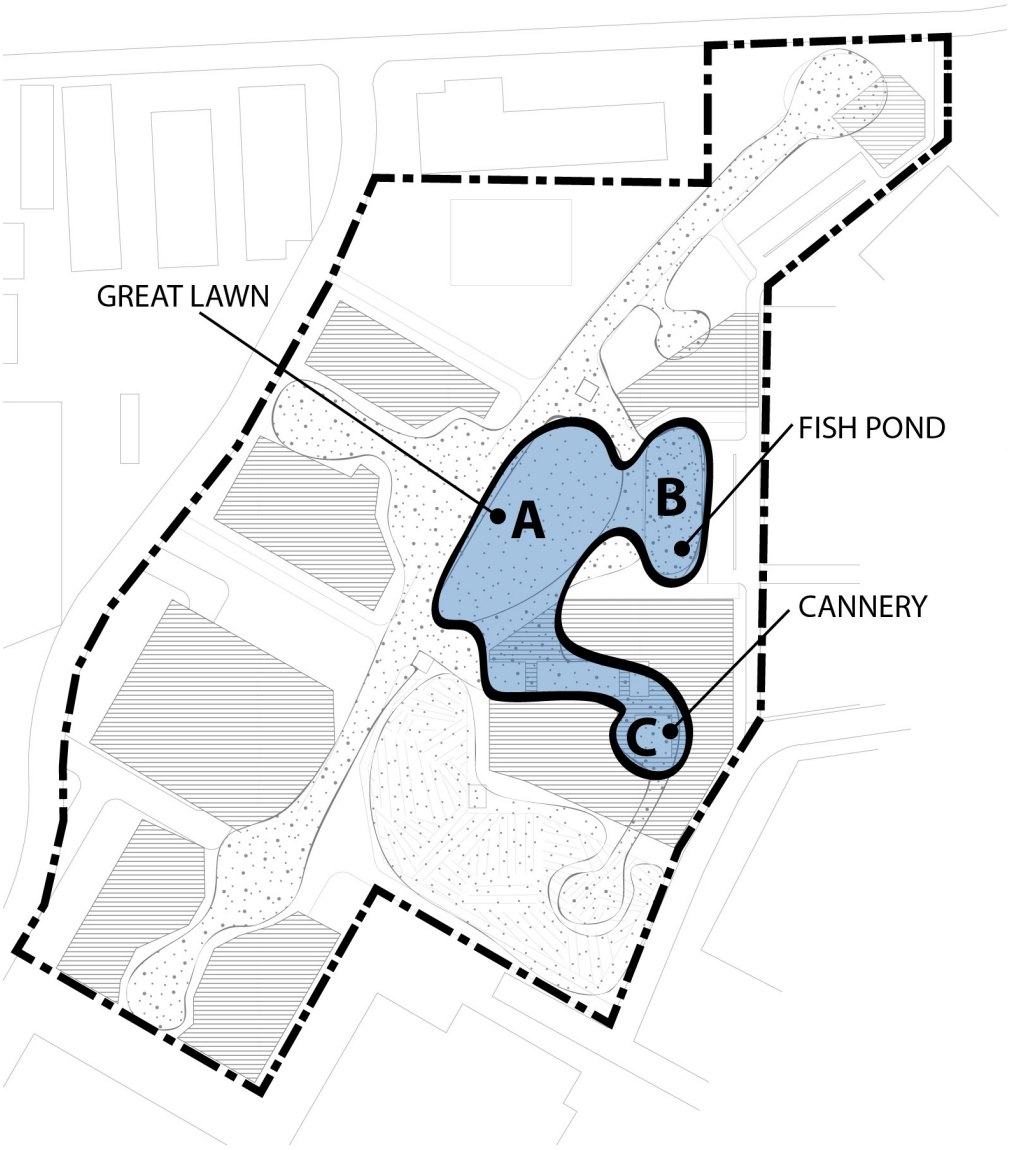


Figure 35. Site Center of Parcel

Piko/Parcel

The center of the parcel (centerline), or *piko*, includes the Great Lawn, Fish Pond, and extends into the Ground Floor of the Cannery. The piko is the point from, toward, and around which everything else moves, and symbolically represents the connection to the heart of the site.

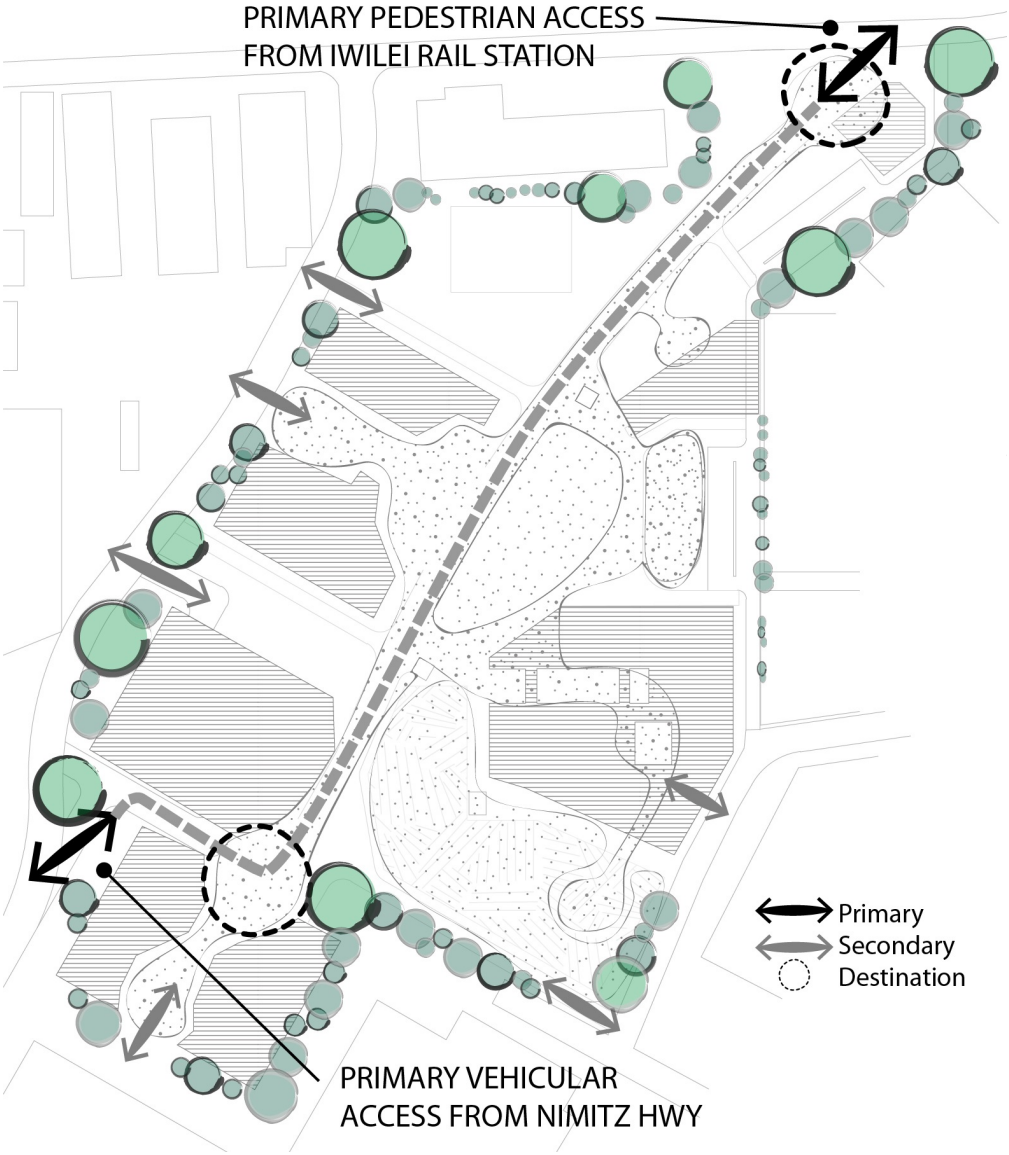


Figure 36. Site Plan with Entries and Exits

Edges/Entry Exit

Landscape is strategically placed to delineate project boundaries. Gaps in the landscape work as a visual cue to denote location of entrances and exits. Two primary entrance/exit locations are located at opposite ends of the project border. The upper entrance is primarily for pedestrians arriving by rail, and the lower entrance is for those arriving from Nimitz Hwy by vehicle. Destinations are marked by dashed circles and are connected by the main pedestrian only pathway.

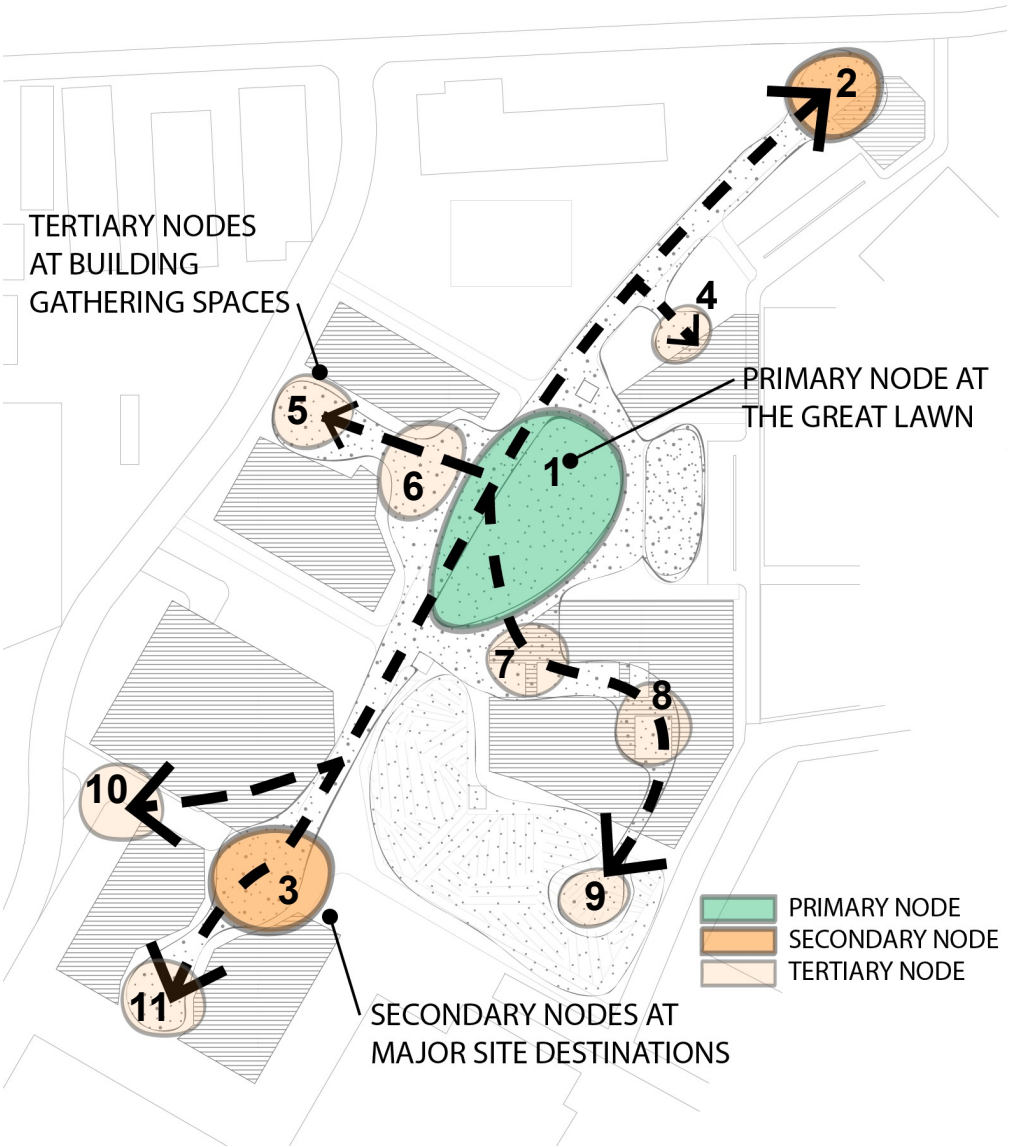


Figure 37. Site Plan with Project Nodes.

Nodes

Eleven nodes are defined throughout the site physically whether through the use of material or continuity of landscape from exterior to interior of the buildings. The nodes represent key points of public gathering places that encourage people to linger and socialize. The nodes that bleed into the project boundaries such as that of 2, 5, and 11 are also used as the connective tissue to the surrounding community.

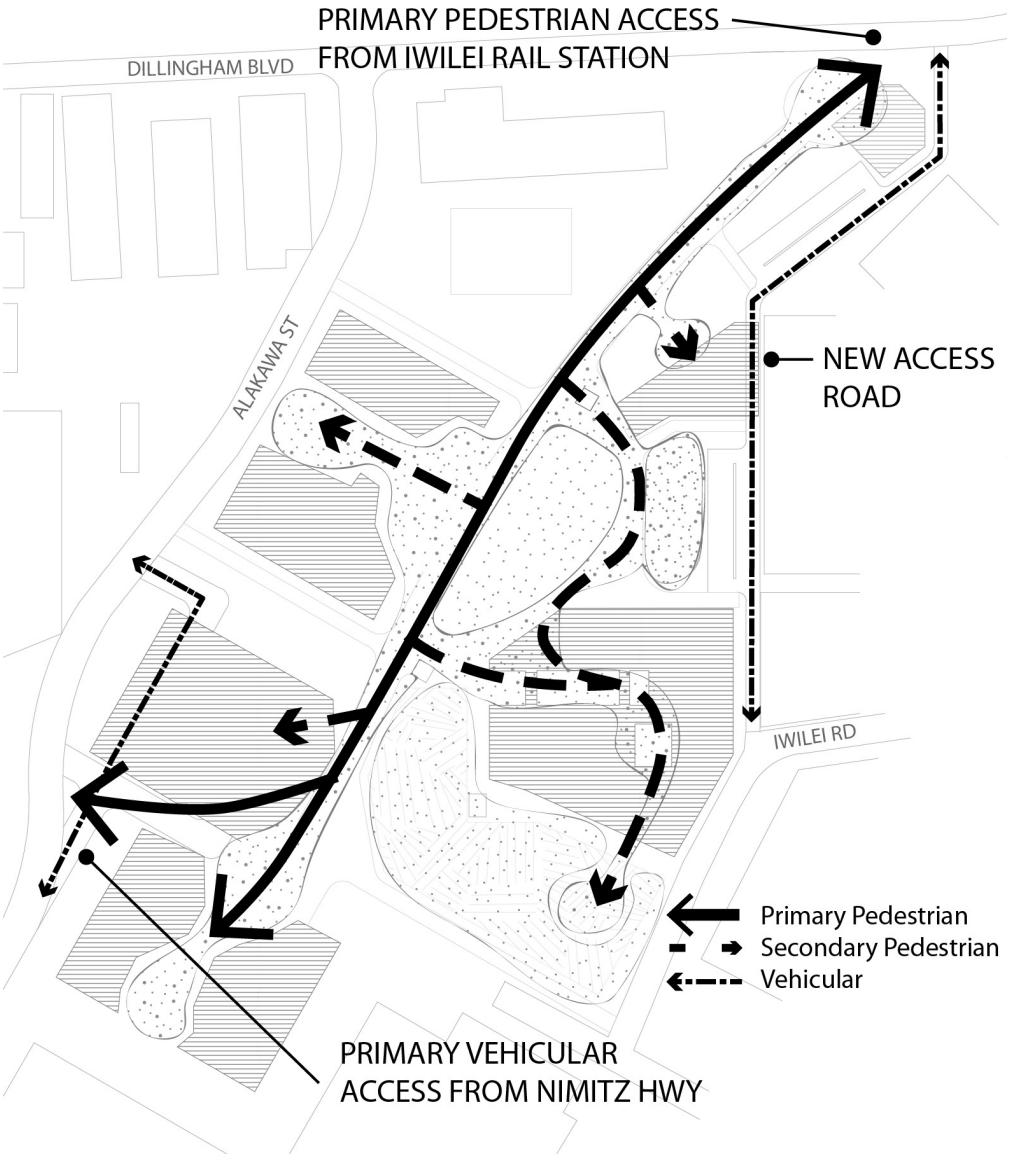


Figure 38. Site Plan Circulation Patterns

Circulation

The site is designed around pedestrian oriented circulation. Primary circulation is located along the sites main axis (black solid line), followed by a secondary circulation (dashed) that leads to points of interest/buildings. Tertiary circulation is introduced along the right edge of the project boundary linking the three buildings and allowing access from Alakawa St. to Dillingham Blvd.

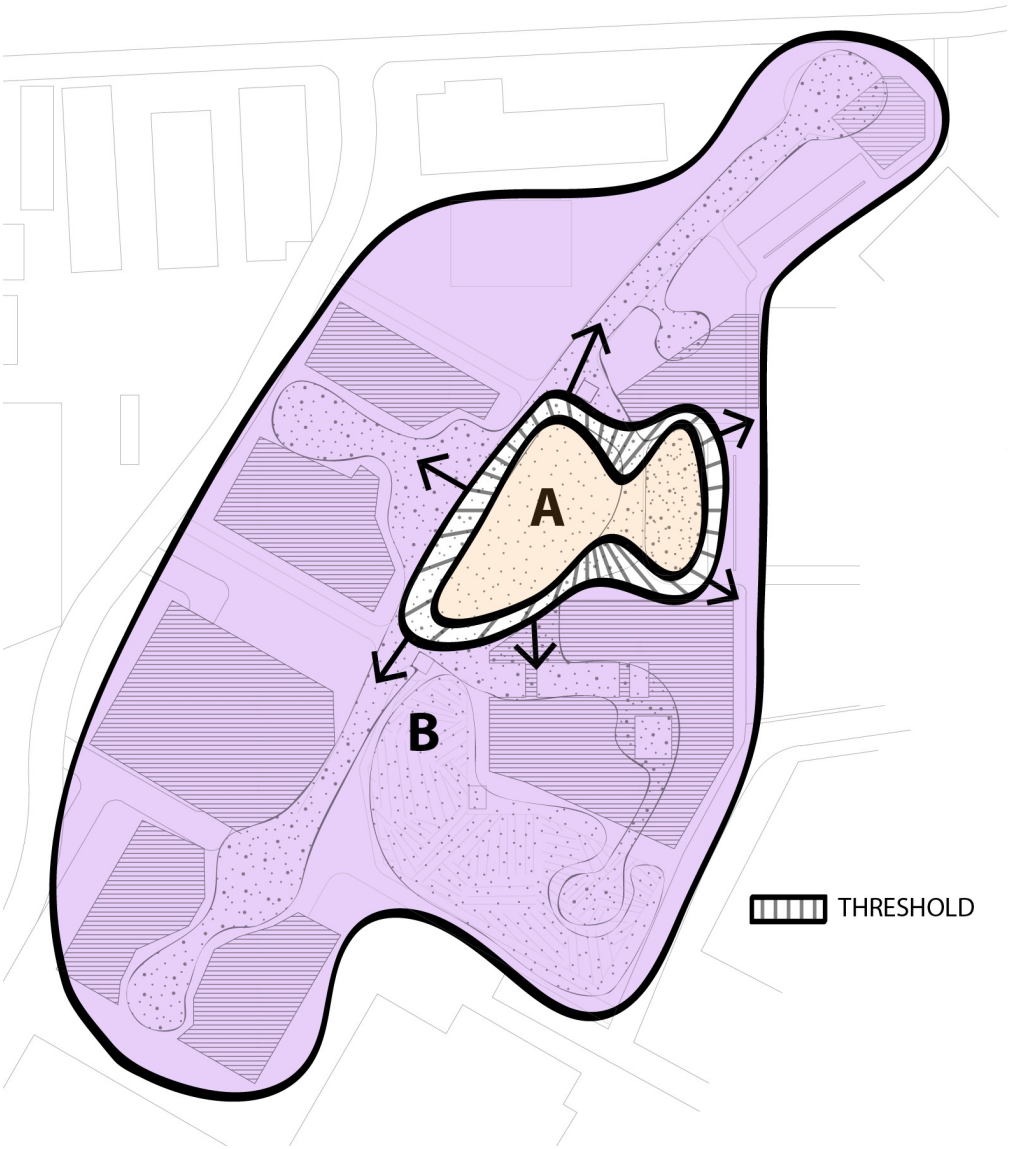


Figure 39. Site Plan with Threshold

Threshold

Separating A from B is the site's threshold. The threshold is integral to its surroundings and will help to provide a unique sense of identity, transition, and anticipation to the surrounding buildings and site.

Figure 40. Cannery Building Ground Floor

Cannery Building Ground Floor-Public

A mix of commercial/retail, artist, and exhibition space will be located at the ground floor of the Cannery. Access to the farm will be encouraged exclusively from the Cannery Building through continuity of materials. Farm production space will be located adiacent to the the Farm House.

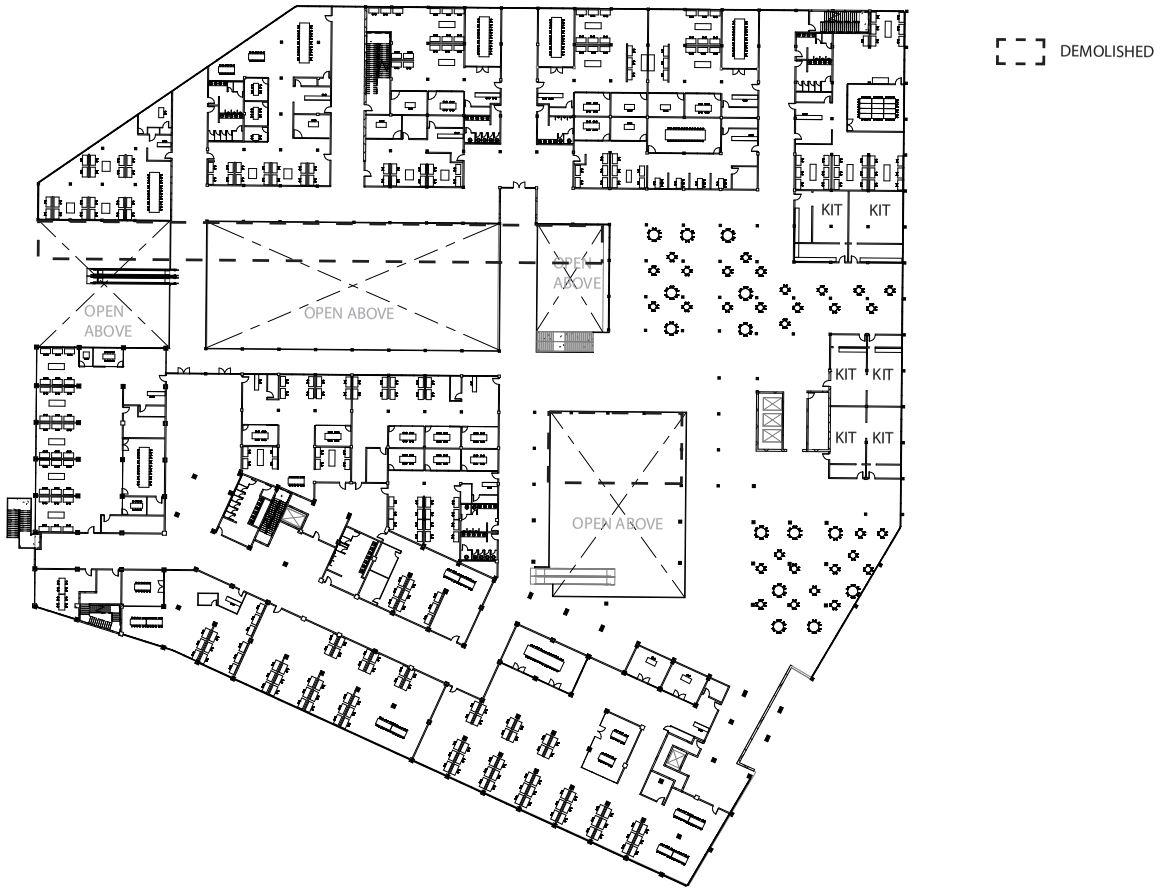


Figure 41. Cannery Building Second Floor

Cannery Building Second Floor-Semi-Private

A mix of offices including several programs of the Department of Human Services are to be located on the second floor. Also located on this floor are the offices for social well being for use by the residents of the building and the community at large.

Figure 42. Cannery Building Third Floor

Cannery Building Third-Floor-Private

Floors 3-7 of the Cannery Building will house the residential units with a mix of traditional and affordable units that range in size from studio to three bedrooms with a shared kitchen.

Shared kitchens are an alternative way of living to provide affordable housing for those who otherwise could not afford a roof over their head.

Residents of the affordable units will be required to participate in some form toward one of the social programs of the site through direct participation as a student chef like that of the London Apprentice Programme, artist, produce/fish farmer, learning commons employee, or informational booth docent.

Figure 43. Cannery Building 4-7 Typical Floor

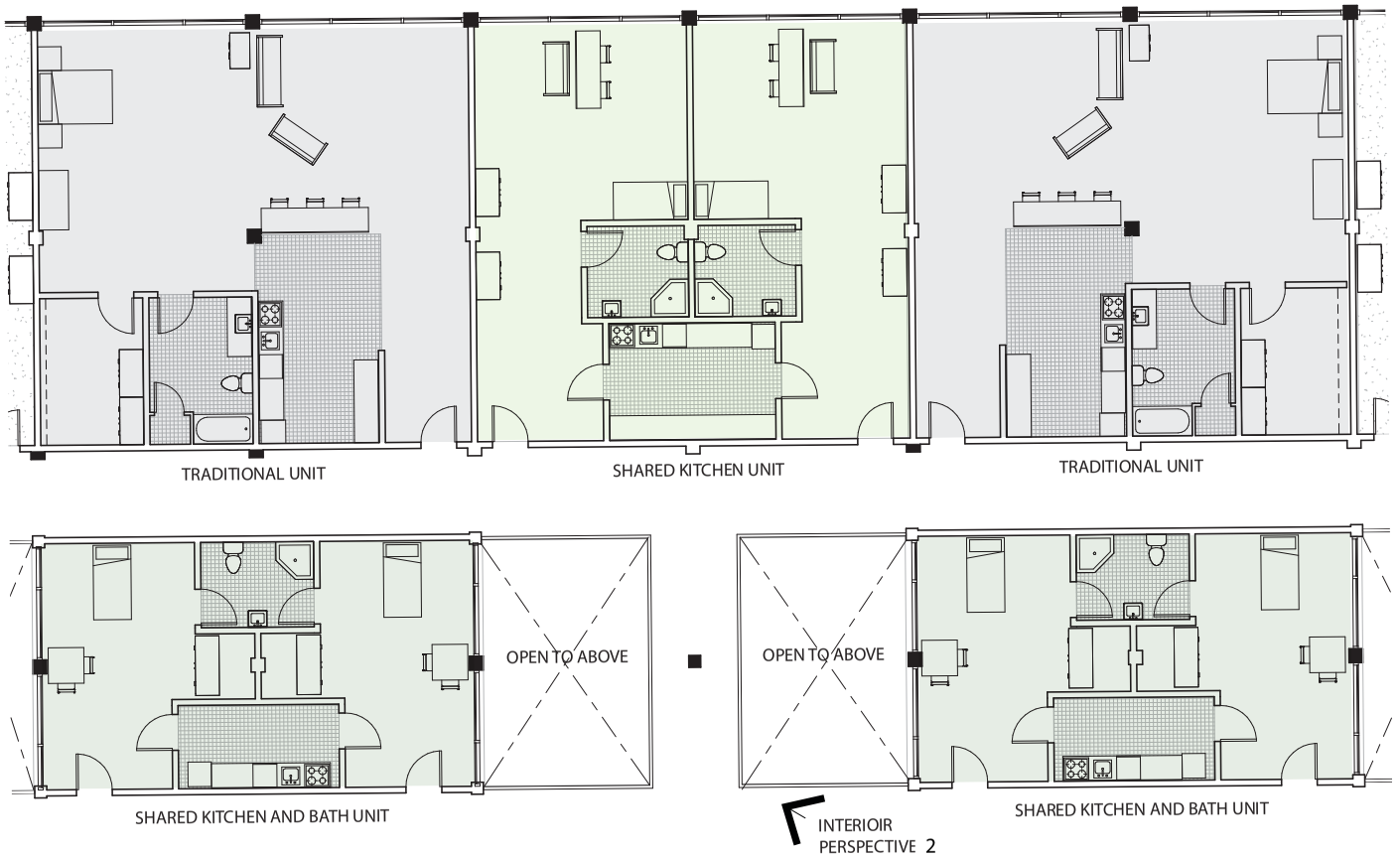


Figure 44. Residential Floor Plan

DISTRIBUTION OF GREEN SPACE

Figure 46. Perspective section showing the vertical and horizontal distribution of green space at the residential units.

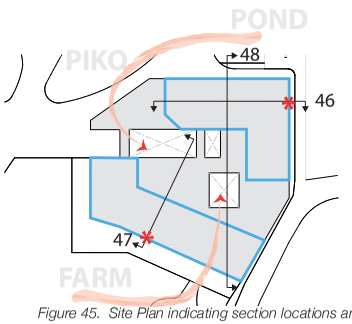


Figure 45. Site Plan indicating section locations and points of green space piercing the building facade

Green space is pulled in through the building at ground level (red arrows in Site Plan) and brought up from the buildings core to the 3rd floor rooftop garden. From the third floor, vertical shafts help to move the green space through each level above. The green space then travels horizontally piercing the buildings facade.

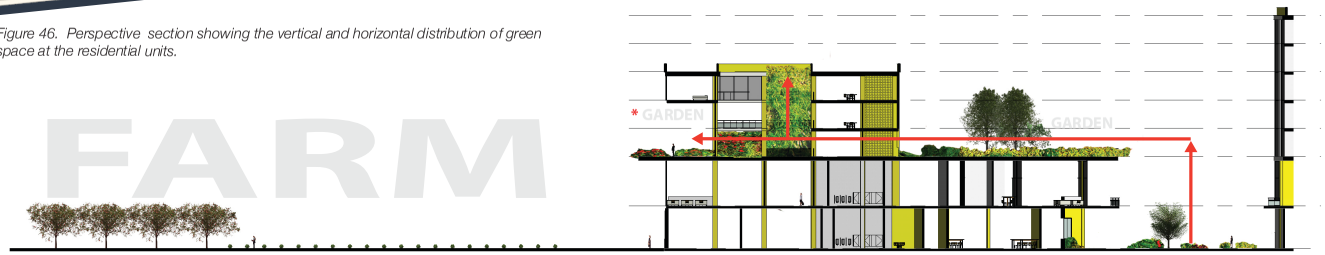


Figure 47. Section through Tower B and farm

Figure 48. Section through Tower A and pond

Renderings

Figure 49 (Top) Rendering from second floor looking Diamond Head. Figure 50 (Left) Photo from second floor atrium. Figure 51 (Above) Photo of Cannery from Alakawa St. parking structure. Figure 51 (Below) Rendering with an approach from Alakawa Street looking Diamond Head.

Figure 53 (Top Left). Typical residential floor plan. Figure 54 (Top Right). Interior perspective looking ewa of residential unit with shared kitchen and bathroom found in Residential Tower A. Figure 55 (Above). Interior perspective of view from common area of Residential Tower B looking makai toward the farm.

Each gathering space will have unique
Hawaiian themes associated with farming plants, nature, animals, etc. The themes will be used as an education and way finding tool for the residents.
The images below depict the vertical shafts penetrating the floors to allow daylight into the rather deep floor plan.

User Experience

DAY IN THE LIFE OF

RYAN

Resident and former homeless person.

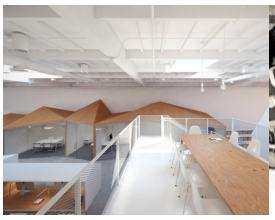
1. Ryan begins his day leaving Residential Tower A

2. Before heading to class he goes to meet with his case program counsler at the Department of Human Services.

3. He then makes his way to the Enrichment Center for a day of learning/participating in the cooking courses at the cooking school.

4. After his courses are complete, he makes his way to the Learning Commons to use the computers and research more on cooking techniques. Ryan finds a couple of books that he would like to borrow then heads back home to drop off the materials he rented from the Learning Commons.

5. He then makes his way back down to the farm to work for an hour or two at the farm, and harvests a few herbs and vegetables for his dinner that evening. Ryan then heads back home and greets his neighbor Reid and shares with him his day and new books that he found of interest.



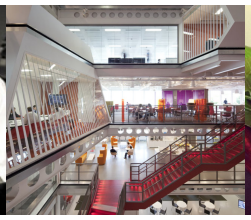
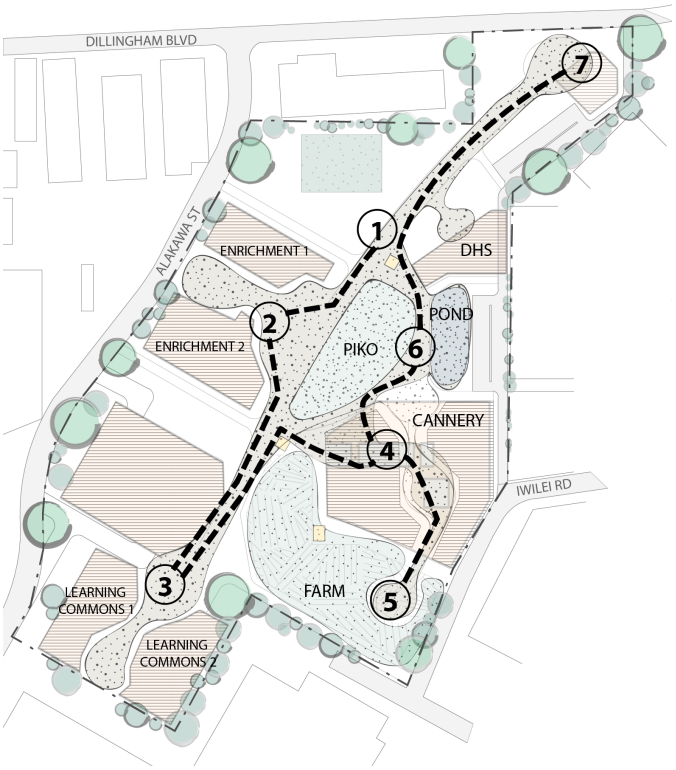


Figure 56. (Top). Circulation of Day in the Life of Ryan. Left to right: Figure 56. DHS offices Source: http://www.thecoolhunter.com.au/offices/. Figure 57. Apprentice Program Cooking Class. Source: http://www.-jamieoliver.com/the-fifteen-apprentice-programme/apprentices/gallery. Figure 58. Learning Commons. Source: http://www.thecoolhunter.com.au/offices/. Figure 59. The harvest from community garden.

DAY IN THE LIFE OF DARLENE, MICHELLE, ZEPHYR



Three generation day visitors arriving from Iwilei Rail Station

1. The family arrives from Iwilei Rail Station and stops at the information booth to pick up a map of the site.

2. They then make their way to the Enrichment Center for a meal at the restaurant that the students of the cooking school have prepared.

3. Zephyr leads the way to the Learning Commons where she is so excited to pick out a few books to take home.

4. The family heads to the shops at the Cannery to look at the art and items for sale. Inside, they notice the Dole Gift Shop/Museum. Darlene reminisces of the time when the Cannery was up and running.

5. Zephyr is in awe of all the fruits and vegetables growing at the farm, that she asks her mother if they too can start a farm at home.

6. On the way back to the rail station, the family stops at the pond to see the fish that they had learned is raised for the restaurants.

7. The family makes one last stop at to pick up a couple of last minute gifts for a birthday party.

Figure 60. (Top). Circulation of Day in the Life of Darlene, Michelle, Zephyr. Left to right: Figure 61. Information hub. Source: http://www.visitlondon.com/traveller-information/place/209511-city-of-london-information-centre. Figure 62. Enrichment Building facade treatment. Source: http://media.treehugger.com/assets/images/2011/10/ford-exterior.jpg. Figure 63. Kids section at the Learning Commons. Source: http://www.designrulz.com/architecture/2011/10/kid's-republic-book-store/. Figure 64. Typical commercial unit with display of art. Source: http://www.thecoolhunter.com.au/article/detail/2139/the-cool-house-opens-today--melbourne. Figure 65. Historic items found at the museum. Figure. 66. Farm. Source: http://i.dailymail.co.uk/i/pix/2013/05/14/article-0-19C67AFD000005DC-368_634x527.jpg

Conclusion

With cities urbanizing at a fast pace, its challenges of a growing population, density and verticality, one must not forget what makes a city great: its people and their interaction of ideas, expressions, and experiences in the public realm.

In the identity of a city, it is easy to focus solely on iconic architecture. Architects, planners, and designers should continue to promote the sustainability of the environment, both in its natural and man-made habitats; however, we must also think beyond retrofitting buildings with sustainable technology. To do this, designers must increasingly think at all scales. Simple awareness leads to thoughtful planning as to how public space can increase biodiversity, restore damaged ecosystems, and promote and improve the stewardship of the health and wellness of its population.

Stewardship as defined is an embodiment of responsible planning and resources and is often conceptually linked to economics, property, information, theology, etc. What I found missing in the definition of stewardship and ultimately missing in the community of Iwilei, was a conceptual link of stewardship to its people.

Society often overlooks our biggest resource. *We* are that resource, and *we* can be the resource for change. Change of community betterment cannot alone be achieved through half heartedly applied fresh paint and new retailers as is the case of the failing Shops at Dole Cannery. Instead, we must first look toward the people and provide them with the resources so that they themselves become a driving force for change in the greater community. By providing effective programs and services (similar to the 15 Apprentice Programme) will we achieve the outcome of empowering those who are most

vulnerable in our community and expand their capacity for self-sufficiency, self-determination, independence, healthy choices, increased quality of life, and personal dignity. The success of these programs ultimately depend on the availability of its resources which are based on funding. This is where the introduction of public private partnership at the Dole Cannery comes into play.

The proposal of public/private partnership at the Dole Cannery will be a coordinated effort between government and private/civil society entities. In conjunction with stewardship of culture, society, and ecology in a cyclical form, it will leverage their resources to achieve greater impact and sustainability in development outcomes.

Living and frequenting businesses near the Shops at Dole Cannery made me all too aware of the lack of foot traffic, excessive parking, and ongoing homeless problems in the area. With a personal interest in a focus of the individual and how designing at the human level with a supporting program will impact society as a whole, I began looking at the community of Iwilei and its services and programs available for the most vulnerable in our communities. What I found was not a lack of services, but a lack of integration of those services into the community and an overall lack of community identity.

Urbanization of Iwilei has occurred without a visible recognition of its past, ultimately losing its sense of community and the thousands of lives that once worked there. Linking a communities past to the future is possible, and the success of the precedent studies of Factory 798, Oxo Tower, and Lawrence Park are evidence of that. Through the precedent studies I found that community identity does not only come in the physical form through architectural character, but through the culture that is formed when its people are engaged in their environment. It is this culture of public engagement that I focused on as the backbone of the proposed design at Dole Cannery where public participation and transparency make a development grow stronger. This form of

stakeholder involvement will be seen as a personal investment into their own community resulting in individuals that take pride and care of their surroundings.

Contributing to the success of the precedent studies is the implementation of mixed-uses that create a self-sustaining development. And so, envisioned at the Dole Cannery are a mix of uses where Commercial, Enrichment, Office, and Residential spaces are all located within a dense walkable community. All programs are envisioned to make use in some form the farm and pond where the site/landscape works in harmony with the program to remain true to the development's initial core values to promote culture, ecology, and social sustainability and bring people together.

Programatic spaces of commercial, enrichment, and offices at the proposed Dole Cannery are rather straight forward. Space is provided to tenants who promote the core values of culture, ecology, and social sustainability. However, residential units are unique in that the recognition of the need for truly affordable housing in the area, resulted with a proposed design where designated units implement the use of a shared kitchen. Current building codes prohibit the use of a shared kitchen and ultimately hinder growth towards providing affordable dwelling options and a sustainable built environment. City and County Ordinance Sec. 27-4.5 Sanitation states:

> (c) Kitchen. Every dwelling unit shall be provided with a kitchen. Every kitchen shall be provided with a kitchen sink. No wooden sink or sink of similarly absorbent material shall be permitted.[62]

With the simple action of allowing two separate dwelling units to share a kitchen, renters are provided an alternative to the otherwise increased cost associated with a full kitchen provided per dwelling unit. The implementation of a shared kitchen also promotes

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[62] Office of Council Services, City and County of Honolulu. *The Revised Ordinances of Honolulu, 1990*. Honolulu, 1990.

interaction amongst our neighbors and helps to move society from an individual focus to a community minded one. Recognizing that a shared kitchen is not ideal for most, it does allow cheaper construction and rent, providing those who otherwise could not afford a roof over their head a means to do so.

Through this type of innovative design and planning proposed at the adaptive reuse of the Dole Cannery that we can bring together the concepts of community uplift, urban renewal, and environmental sustainability. A balance of public and private entities create a symbiotic socioecology. It is this stewardship at all levels of cultural, sociological, and ecological beings of our cities that should not only apply to the creation of iconic skylines, but to also function from the perspective of and for each member of society.

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